

8911



RESERVOIR CHARACTERIZATION REPORT
VOLUME II
CHEMICAL CHARACTERIZATION
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CA
MAY 1999

Original document prepared under:

U.S. EPA Work Assignment No.: 3-304
Weston Work Order No.: 03347-143-001-3304-01
U.S. EPA Contract No.: 68-C4-0022



OFFICE OF EMERGENCY AND REMEDIAL RESPONSE

RESERVOIR CHARACTERIZATION REPORT
VOLUME II
CHEMICAL CHARACTERIZATION
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CA
MAY 1999

Original document prepared under:

U.S. EPA Work Assignment No.: 3-304
Weston Work Order No.: 03347-143-001-3304-01
U.S. EPA Contract No.: 68-C4-0022

Document revised August 2000 under:

U.S. EPA Work Assignment No.: 0-085
Lockheed Martin Work Order No.: RIA00085
U.S. EPA Contract No. 68-C99-223

Prepared by:

Lockheed Martin/REAC

Prepared for:

U.S. EPA/ERTC

Ken Woodruff _____ Date
REAC Senior Hydrogeologist

William Coakley
Work Assignment Manager

Steven A. Clapp _____ Date
REAC Program Manager

Original document prepared by:
Edward McGovern, REAC QA Officer
Vasu Desikan, REAC QA Chemist
Gary Newhart, REAC Task Leader

TABLE OF CONTENTS

- 1.0 INTRODUCTION
- 2.0 CHEMICAL CHARACTERIZATION
- 3.0 PREPARATION OF CONCENTRATION CONTOUR MAPS
- 4.0 RESULTS OF LIQUID SAMPLE ANALYSES
 - 4.1 Extraction Wells and Piezometers
 - 4.2 Well EX- I Barrel and Well EX-2 Composite Oil
 - 4.3 Baker Tanks
 - 4.4 Piezometer PB4-PVC
 - 4.5 Grid Piezometers
 - 4.5.1 Organic Liquid Samples
 - 4.5.2 Aqueous Samples
- 5.0 RESULTS OF SOIL VAPOR ANALYSES
 - 5.1 Field Gas Chromatography
 - 5.2 Tenax™/Carbon Molecular Sieve Vapor Samples
 - 5.3 SUMMA™ Canister Confirmation of Vinyl Chloride

APPENDICES FINAL ANALYTICAL REPORTS

- A. Wells EX-1, VW-9, P1, P2, P3, P4
- B. Well EX-1 Barrel and Well EX-2 Composite Oil
- C. Piezometers and Baker Tanks - Organic Liquids
- D. Piezometers and Baker Tanks - Water Samples
- E. Piezometer PB4-PVC
- F. Tenax/Carbon Molecular Sieve
- G. Summa Canister Samples

ILLUSTRATIONS

- Figure 1. Grid Piezometer Locations
- Figure 2. Location of Extraction Wells and Associated Piezometer Wells
- Figure 3. Reservoir Cross Section Showing PVC Piezometer Construction
- Figure 4a. Total Aroclor Concentration Contours (ppm) for Reservoir Grid Piezometer Wells and Extraction Wells - Series "a"
- Figure 4b. Total Aroclor Concentration Contours (ppm) for Reservoir Grid Piezometer Wells and Extraction Wells - Series "b"
- Figure 5a. Total Aroclor Concentration Contours (ppm) for Reservoir Grid Piezometer Wells Series "a"
- Figure 5b. Total Aroclor Concentration Contours (ppm) for Reservoir Grid Piezometer Wells Series "b"
- Figure 6a. Benzene Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples Series "a"
- Figure 6b. Benzene Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples Series "b"

- Figure 7a. Ethylbenzene Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "a"
- Figure 7b. Ethylbenzene Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "b"
- Figure 8a. Toluene Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples Series "a"
- Figure 8b. Toluene Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples Series "b"
- Figure 9a. Total Xylenes Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "a"
- Figure 9b. Total Xylenes Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "b"
- Figure 10a. PCE Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "a"
- Figure 10b. PCE Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "b"
- Figure 11a. TCE Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "a"
- Figure 11b. TCE Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "b"
- Figure 12a. Total DCE Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "a"
- Figure 12b. Total DCE Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "b"
- Figure 13a. VC Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "a"
- Figure 13b. VC Concentration Contour Map (mg/L) For Reservoir Organic Liquid Samples - Series "b"
- Figure 14a. Naphthalene Concentration Contour Map (mg/kg) For Reservoir Organic Liquid Samples - Series "a"
- Figure 14b. Naphthalene Concentration Contour Map (mg/kg) For Reservoir Organic Liquid Samples - Series "b"
- Figure 15a. 2-Methylnaphthalene Concentration Contour Map(mg/kg) For Reservoir Organic Liquid Samples - Series "a"
- Figure 15b. 2-Methylnaphthalene Concentration Contour Map (mg/kg) For Reservoir Organic Liquid Samples - Series "b"
- Figure 16a. Phenanthrene Concentration Contour Map (mg/kg) For Reservoir Organic Liquid Samples - Series "a"
- Figure 16b. Phenanthrene Concentration Contour Map (mg/kg) For Reservoir Organic Liquid Samples - Series "b"
- Figure 17a. Lead Concentration Contour Map (mg/kg) For Reservoir Organic Liquid Samples - Series "a"
- Figure 17b. Lead Concentration Contour Map (mg/kg) For Reservoir Organic Liquid Samples - Series "b"
- Figure 18. Methane Concentration Contour Map (%v/v) - P200 FPGC
- Figure 19. Carbon Dioxide Concentration Contour Map (%v/v) - P200 FPGC
- Figure 20. Benzene Concentration Contour Map (ppmv) GC/PID
- Figure 21. Ethylbenzene Concentration Contour Map (ppmv) GC/PID
- Figure 22. Toluene Concentration Contour Map (ppmv) GC/PID
- Figure 23. p-Xylene Concentration Contour Map (ppmv) GC/PID
- Figure 24. PCE Concentration Contour Map (ppmv) GC/PID
- Figure 25. TCE Concentration Contour Map (ppmv) GC/PID
- Figure 26. Benzene Concentration Contours (ppmv) Tenax™/CMS, 15 to 21 August 1998
- Figure 27. Toluene Concentration Contours (ppmv) Tenax™/CMS, 15 to 21 August 1998
- Figure 28. PCE Concentration Contours (ppmv) Tenax™/CMS, 15 to 21 August 1998
- Figure 29. TCE Concentration Contours (ppmv) Tenax™/CMS, 15 to 21 August 1998
- Figure 30. Total DCEs Concentration Contours (ppmv) Tenax™/CMS, 15 to 21 August 1998
- Figure 31. VC Concentration Contours (ppmv) Tenax™/CMS, 15 to 21 August 1998

TABLES

- Table 1. VOA, BNA, Pesticide/PCB and Metals Results (Hits Only) for the Analysis of Oil Collected from Extraction Wells
- Table 2. VOA, BNA, and Pesticide/PCB Results (Hits Only) for the Analysis of Oil Collected from Extraction Wells
- Table 3a. VOA and Metals Results (Hits Only) for the Analysis of Oil and Water Samples Collected from Baker Tanks
- Table 3b. BNA and Pesticide/PCB Results for Organic Waste Sample and Water Sample Collected from Baker Tanks
- Table 4. VOA, BNA, Pesticide/PCB and Metals Results (hits only) for the Analysis of Oil Collected from Piezometer PB4-PVC
- Table 5a. VOC Results (hits only) in mg/L for Organic Product Samples Collected from Grid Piezometers
- Table 5b. BNA Results (hits only) in mg/kg for Organic Product Samples Collected from Grid Piezometers
- Table 5c. Pesticide/PCB Results (hits only) in µg/kg for Organic Product Samples Collected from Grid Piezometers
- Table 5d. Metals Results (hits only) in mg/L for Organic Product Samples Collected from Grid Piezometers
- Table 6a. VOC Results (hits only) in µg/L for water Samples Collected from Grid Piezometers
- Table 6b. BNA Results (hits only) in µg/L for Water Samples Collected from Grid Piezometers
- Table 6c. Pesticide/PCB Results (hits only) in µg/L for Water Samples Collected from Grid Piezometers
- Table 6d. Metals Results (hits only) in mg/L for Organic Product Samples Collected from Grid Piezometers
- Table 7a. Results of Tenax/CMS Cartridge Analyses in ppbv for Soil Gas Collected from Grid Piezometers
- Table 7b. Results of Tedlar Bag Analysis in ppbv of Desorbed Tenax/CMS Cartridges Collected at Grid Piezometers
- Table 8. Vinyl Chloride Results -Tedlar Bag Screening and Confirmatory Analysis by Summa Canisters.

Abbreviations in Tables:

micrograms (μg); micrograms per liter ($\mu\text{g/L}$); milligrams per liter (mg/L); micrograms per kilogram ($\mu\text{g/kg}$);

Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

**RESERVOIR CHARACTERIZATION REPORT,
VOLUME II,
CHEMICAL CHARACTERIZATION (REVISED)
WASTE DISPOSAL, INC. SITE
SUMMARY OF ANALYTICAL RESULTS**

1.0 INTRODUCTION

The Waste Disposal, Inc. (WDI) Superfund site contains a buried reservoir, believed to have a capacity of 42 million gallons, that was constructed for crude petroleum storage. Based on remedial investigations of the area, wastes disposed at WDI included petroleum related chemicals, solvents, acetylene sludges, drilling muds, construction debris, and cesspool sewage.

This report discusses the results of analyses of liquid and gas samples collected within the reservoir at various monitoring points. Organic liquid and aqueous sampling points included Monitoring Wells VW-9 and PB4-PVC, Extraction Wells EX-1 and EX-2, Piezometers P-1 through P-4 paired with selected extraction wells, piezometers installed at reservoir grid nodes, a 600 gallon Baker tank, and a 6,000 gallon Baker tank. Soil gas samples were taken along transects of reservoir grid piezometers using both Tenax™/Carbon Molecular Sieves (CMS) and Summa™ canister samples. Summa canister samples were collected mainly for confirmation of vinyl chloride.

The locations of the piezometer grid points within the reservoir boundaries are presented in Figure 1. The locations of Extraction Wells EX-1 and EX-2 and their associated piezometers are given in Figure 2. A cross-section of the reservoir, depicting the placement and construction of the grid piezometers is shown in Figure 3. The results from the sample analyses are grouped by sample type in the sections following below. The analytical results are summarized in Tables 1 through 8, and the complete laboratory reports can be found in Appendices A through G.

2.0 CHEMICAL CHARACTERIZATION

To help evaluate final remedial design and liquid disposal options, the reservoir liquids were characterized to determine:

- The presence of both aqueous, light non-aqueous phase liquids (LNAPL), and dense non-aqueous phase liquids (DNAPL).
- The generation potential for volatile organic compounds (VOCs).
- The presence of hazardous substances.

3.0 PREPARATION OF CONCENTRATION CONTOUR MAPS

Contour maps showing the concentration of organic liquid analytes were prepared with two different constraints: (1) contours are restricted to only within the reservoir boundary (series "a"), and (2) restricted within the reservoir boundary and further limited to the area surrounding the points sampled (series "b"). The "a" model extended concentration contours across the entire reservoir including areas where no liquid samples had been collected. Due to the variability in the presence of product, only 16 of the 59 nodal points were sampled. The analytical data are posted on the maps. This contour model may overestimate analyte concentrations.

The "b" concentration contour maps assigns a zero value to all nodal points within the reservoir which were not sampled. This constrains the contours to only those areas for which analytical data exists and results in a conservative distribution model of analytes within the reservoir. It is highly improbable for all of the remaining 43 nodal points to have analyte concentrations of "0". It is more likely that the remaining 43 points will produce a distribution of results similar to those obtained for the 16 locations sampled. The "b" series contour maps probably underestimate the true distribution of contaminants in the reservoir.

The "b" series contour maps were prepared using the software modeling program SURFER® (Golden Software, Inc., Golden, Colorado) employing Kriging as the contouring method. ArcView® was used initially for preparing the original "a" series concentration contour maps. However, SURFER allows greater user control over the contouring parameters.

4.0 RESULTS OF LIQUID SAMPLE ANALYSES

4.1 Extraction Wells and Piezometers

Six organic liquid samples were collected from piezometers P-1, P-2, P-3, P-4, and extraction wells EX-1, and Vapor Well VWO9 on 5 June 1998 and 7 June 1998 and analyzed for VOC, base-neutral acid-extractables (BNAs), pesticide/polychlorinated biphenyls (PCBs), and target analyte list (TAL) metals. The results of these analyses are summarized in Table 1 and the complete analytical report is contained in Appendix A.

Benzene was detected in five samples with results ranging from 140 milligrams per kilogram (mg/kg) to 310 mg/kg, while toluene was detected in all samples with results ranging from 44 mg/kg to 1,900 mg/kg. Trichloroethene (TCE) was detected in samples collected from P-1, P-2, P-4, and EX-1 at 140 mg/kg, 290 mg/kg, 31 mg/kg, and 86 mg/kg respectively. Tetrachloroethene (PCE) was detected in samples collected from P-1, P-3, and EX-1 at 44 mg/kg, 40 mg/kg, and 120 mg/kg respectively and vinyl chloride (VC) was detected in two samples P-2 (48 mg/kg) and P-4 (44 mg/kg).

Aroclor 1260 was detected in all samples ranging in concentration from 1.2 mg/kg to 330 mg/kg. Aroclor 1254 was detected in all samples except P-3 ranging from 4.3 mg/kg to 9.7 mg/kg, and Aroclor 1248 was detected in samples P-1, P-2, and P-3 at 8.2 mg/kg, 6.4 mg/kg, and 140 mg/kg respectively.

Figures 4a and 4b present the concentration contour models for all PCB results, including the very high results for P-3 and EX-2. Figures 5a and 5b exclude all of the results for the extraction wells and their associated piezometers and present the contour map for the reservoir grid piezometers only.

The highest PCB concentrations are restricted to locations very near P-3 and EX-2 and to a lesser extent grid location 1-4, however lower levels of PCBs are widely distributed throughout the remaining reservoir organic phase sample locations.

Other analytes including alkylated benzenes, polynuclear aromatic hydrocarbons (PAHs), and metals were identified in the samples, and are reported in Appendix A.

4.2 Well EX-1 Barrel and Well EX-2 Composite Oil

Two organic liquid samples, one from EX-1 Barrel 1 (EX-1) and the other from EX-2 composite oil (EX-2) were collected on 30 June 1998 and submitted for VOC, BNA, and Pesticide/PCB analyses. The analytical results summary is presented in Table 2 and the complete analytical report is contained in Appendix B.

Toluene at 98 mg/kg and 310 mg/kg respectively was reported in both the EX-1 and EX-2 samples. Benzene (28 mg/kg) and TCE (58 mg/kg) were detected in the EX-2 sample only.

Aroclor 1248 (7.2 mg/kg, 190 mg/kg), Aroclor 1254 (11 mg/kg, 130 mg/kg), and Aroclor 1260 (4.6 mg/kg, 310 mg/kg) were detected in both samples respectively. Other analytes, including alkylated benzenes and PAHs were identified, and are reported in Appendix B.

4.3 Baker Tanks

Two samples were collected from the Baker Collection Tanks on 19 August 1998. An organic liquid sample was collected from the 600 gallon Baker Tank, and an aqueous sample was collected from TRC Environmental Solutions, Inc.'s (TRC) Large Baker Tank (6,000 gallon). Duplicate samples were collected at each location. One sample set was submitted to the Response Engineering and Analytical Contract (REAC) Laboratories in Edison, New Jersey and the second set was sent to QST Environmental, Inc. (QST) in Newberry, Florida for analysis. The analytes include VOCs, BNAs, Pesticides/PCBs, and TAL metals. The analytical results summary is presented in Tables 3a and 3b and the complete analytical report is contained in Appendices C (REAC) and D (QST).

Toluene was detected in both the 600 gallon Baker Tank oil sample and TRC's Large Baker Tank at 40 milligrams per liter (mg/L) and 0.11 mg/L respectively. In addition, PCE (7.2 mg/L, 0.004 mg/L), benzene (5.9 mg/L, 0.055 mg/L), and TCE (11 mg/L, 0.04 mg/L) were detected in the both the oil sample and the aqueous sample respectively.

Aroclors 1248 and 1260 were detected in both samples at 150 mg/kg and 0.046 mg/L, and 190mg/kg and 0.057 mg/L respectively. Other analytes including PAHs, alkylated benzenes, and metals were detected and are reported in Appendices C and D.

4.4 Piezometer PB4-PVC

An organic liquid sample was collected on 20 May 1998 from a PVC piezometer installed adjacent to Well PB4, located near grid piezometer point A4, and sent to the laboratory with instructions to analyze the upper organic layer only for VOCs, BNAs, Pesticides/PCBs, and TAL metals. This sample was very viscous and difficult to transfer into the sample bottle. The analytical results summary is presented in Table 4. The complete analytical report is contained in Appendix E.

Benzene and toluene were detected at 18 mg/kg and 8.8 mg/kg respectively. Aroclors 1242, 1248, and 1260 were detected at 1.2 mg/kg, 2.5 mg/kg, and 2.2 mg/kg respectively. Other analytes including PAHs, alkylated benzenes, and metals were detected and are reported in Appendix E.

4.5 Grid Piezometers

4.5.1 Organic Liquid Samples

Organic liquid samples were collected in duplicate from sixteen grid piezometers on 13 August 1998 and shipped to the REAC Laboratories and to QST for analysis of VOCs, BNAs, pesticides/PCBs, and TAL metals. These piezometers were installed at site grid nodes by Camp, Dresser, and McKee Inc. (CDM), Federal Programs Corporation. The analytical results summary is presented in Tables 5a, 5b, 5c, and 5d. The complete analytical reports are presented in Appendices C and D.

Benzene was detected in 15 samples. Two samples, located at F9 (310 mg/L) and H2 (260 mg/L), exhibited concentrations above the method detection limits (MDL). Toluene was detected in 16 samples. Eleven locations exhibited concentrations above the MDL ranging from 2,700 mg/L at F9 to 260 mg/L at I4. PCE was detected in seven samples. Two locations, G1 (4,000 mg/L) and G2 (780 mg/L), exhibited concentrations above the MDL. TCE was detected in six samples. However, only sample locations G1 (660 mg/L) and G9 (500 mg/L) exhibited concentrations above the MDL. Total dichloroethene (DCE) was detected at eight sample locations with concentrations ranging from 273 mg/L at G1 to 5.1 mg/L at sample location F7. VC was detected in four samples at concentrations ranging from 31 mg/L at location G1 to 5.1 mg/L at location F7. Other analytes including PAHs, alkylated benzenes, and metals were detected and are reported in Appendices C and D. Concentration contour maps for benzene, ethylbenzene, toluene, total xylenes, PCE, TCE, total DCE, VC, naphthalene, 2-methylnaphthalene, phenanthrene, and lead are presented in Figures 6a through 17b.

Aroclor 1248 and Aroclor 1260 were detected in all samples. The Aroclor 1248 results range from 0.4 mg/kg at H2 to 61 mg/kg at I4, and the Aroclor 1260 results ranged from 0.46 mg/kg at F9 to 78.4 mg/kg at I4. The concentration contour maps for total PCBs are presented in, Figures 4a, 4b, 5a, and 5b.

Benzene, ethylbenzene, toluene, total xylenes, naphthalene, and 2-methylnaphthalene concentration contour maps exhibit similar distribution profiles suggesting these analytes are distributed within the same matrix. The chlorinated volatile organics, PCE, TCE, total DCE, and VC, however present a concentration contour distribution distinctly different from the hydrocarbons, suggesting they are not derived from the same source as the hydrocarbons. Additionally, the distribution contours for PCE, TCE, total DCE and VC are similar, as would be expected when some of the components are metabolic products derived from PCE and TCE.

4.5.2 Aqueous Samples

Aqueous samples were collected from ten grid piezometers (B6, B7, B8, C4, C5, C8, E3, H7, H8, and I7) on 20 and 21 August 1998, and sent to the REAC Laboratories and to QST for analyses of VOCs, BNAs, Pesticides/PCBs, and TAL metals. The results are summarized in Tables 6a, 6b, 6c, and 6d.

Benzene was detected at nine locations. Five locations exhibited results above the MDL ranging from 0.16 micrograms per liter ($\mu\text{g}/\text{L}$) at B8 to 0.52 $\mu\text{g}/\text{L}$ at C5. VC was detected at ten locations. Four locations exhibited results above the MDL with results ranging from 0.11 $\mu\text{g}/\text{L}$ at B8 to 7.8 $\mu\text{g}/\text{L}$ at B6.

Aroclor 1248 and Aroclor 1260 were detected in two samples E3 (1.4 µg/L and 0.8 µg/L respectively) and H7 (7.7 µg/L and 5.5 µg/L respectively). Other analytes including phenols, pesticides, and metals were detected and are reported in Appendices C and D.

5.0 RESULTS OF SOIL VAPOR ANALYSES

5.1 Field Gas Chromatography

During 4 to 8 August 1998 and 19 to 26 August 1998, soil gas samples were collected from PVC probes installed above the liquid levels at reservoir grid nodes. The samples were analyzed for methane, carbon dioxide, and VOCs. The complete field results are given in the *Revised FPGC Field Analytical Report (REVISED FPGC FIELD ANALYTICAL REPORT, WDI SITE, SANTA FE SPRINGS, CA, FEBRUARY 1999, WESTON/REAC)*. However, a summary, of significant findings [results greater than 10 percent volume/volume (v/v) for methane or greater than 10 parts per million by volume (ppmv) for benzene, PCE, and TCE] are presented here. **All results for VC are invalid due to the presence of analytes in the sample which interfere with the VC quantitation. Therefore, no results for VC are presented here.** As a screening method, the field analytical results have been used as a guide for the collection of samples submitted for definitive analysis.

Samples analyzed from the A transect probes show significant levels of methane and TCE at locations A6 (methane, 12.67 percent), A4 (TCE, 11.94 ppmv), and A6 (TCE, 15.6 ppmv). The B transect probes show significant levels of TCE at location B6 (11.5 ppmv). No significant levels of methane, benzene, PCE, or TCE were detected in any of the C transect probes. The D transect probes showed only significant levels of methane at locations D5 (35.41 percent) and D9 (17.36 percent) with no significant levels of the other analytes of concern.

The E transect probes showed significant levels of methane (at locations E1 (10.7 percent) and E6 (12.29 percent)), benzene at locations E1 (14.5 ppmv), E2 (16.5 ppmv), E5 (31.7 ppmv), and E6 (11.9 ppmv), and TCE at locations E1 (16 ppmv), E5 (3.5.2 ppmv), E6 (10.7 ppmv), E8 (2.3.2 ppmv), and E9 (72 ppmv). The F transect probes showed significant levels of methane, benzene, and TCE at locations F1 (71 percent, 32.5 ppmv, and 21.2 ppmv), F3 (28.6 percent, 21.1 ppmv, and 15 ppmv), F2 (44 percent, 12.1 ppmv, and 31.2 ppmv), and F4 (85 percent, 13.3 ppmv, and 23.3 ppmv) and significant levels of benzene and TCE at locations F8 (10.2 ppmv and 12.9 ppmv) and F9 (20 ppmv and 13.8 ppmv). Significant levels of PCE were also present at locations F2 (31.2 ppmv), F3 (15 ppmv), F4 (23.3 ppmv), and F9 (13.8 ppmv).

The G transect probes showed significant levels of methane, benzene, and TCE at locations G1 (28.5 percent, 33.9 ppmv, and 53.3 ppmv), G2 (53.4 percent, 29.5 ppmv, and 22 ppmv), G3 (53.8 percent, 31.7 ppmv, and 19.7 ppmv), G4 (30.2 percent, 23.6 ppmv, and 30.2 ppmv), G5 (21.2 percent, 28.6 ppmv, and 28 ppmv), G6 (50.4 percent, 34.2 ppmv, and 13.9 ppmv), and G7 (84 percent, 16.8 ppmv, and 13.1 ppmv). PCE was also present at location G1 (38.8 ppmv). The H transect probes showed significant levels of methane, benzene, and TCE at locations H2 (36 percent, 54.9 ppmv, and 39.2 ppmv) and H4 (75.2 percent, 48.5 ppmv, and 24.7 ppmv), benzene and TCE at locations H3 (10.2 ppmv and 10.4 ppmv) and H5 (11.7 ppmv and 18.4 ppmv), and TCE at location H6 (28 ppmv). The I transect probes showed significant levels of methane, benzene, and TCE at location I4 (51.8 percent, 15.6 ppmv, and 10.5 ppmv), methane and TCE at location I6 (11.6 percent and 12.9 ppmv), and benzene and TCE at location I5 (16.3 ppmv and 15.4 ppmv).

The analytical results presented above have been used to construct concentration contour maps for each analyte. These maps are presented for methane, carbon dioxide, benzene, ethylbenzene, toluene, para-xylene, PCE, and TCE in Figures 18 through 25. However, the map areas are constrained to

within the reservoir boundary only.

5.2 TenaxTM/Carbon Molecular Sieve Vapor Samples

Tenax/Carbon Molecular Sieve (CMS) samplers were used to collect vapor samples from the reservoir grid piezometer wells during 15 to 21 August 1998. The complete analytical report for these results is contained in Appendix F, and Tables 7a and 7b summarize the results. A summary of significant findings for benzene, toluene, total DCE, PCE, TCE, and VC for samples exhibiting concentrations greater than one ppmv is presented here.

Three samples were collected from the A transect: A4, A4-Shallow, and A5. None of the target compounds was detected in these samples at levels greater than one ppmv. Four samples were collected from the B transect: B4, B5, B7, and B8. Benzene and VC were detected in sample B5 at levels of 0.62 ppmv and 2.2 ppm respectively. Five samples were collected from the C transect: C3, C4, C5, C8, and C9. Sample C5 showed VC at 1.3 ppmv. Seven samples were collected from the D transect: D3-Shallow, D3, D5, D6, D7, D8, and D9. Sample D7 showed VC at 13 ppmv while sample D9 showed benzene at 0.66 ppmv. Seven samples were collected from the E transect: E, E1, E2, E3, E7, E8, and E9. Benzene was detected in samples E2, E5, E7, and E9 at levels which ranged from 1.1 ppmv (E2) to 94 ppmv (E5). PCE was detected in samples E2 and E5 at 9.8 ppmv and 4.2 ppmv, respectively, while TCE was detected in samples E2, E5, and E8 at 1.9 ppmv, 130 ppmv, and 1.5 ppmv respectively. VC was detected in samples E2, E5, E8, and E9 at 4.4 ppmv, 220 ppmv, 1.2 ppmv and 120 ppmv respectively. Five samples were collected from the F transect, F1, F2, F3, F3-Shallow, and F9. Benzene was found in samples F1, F2, F3 and F9 at 120 ppmv, 1.9 ppmv, 36 ppmv, and 16 ppmv respectively. PCE was found in sample F2 at 130 ppmv while TCE was found in samples F2 and F3 at 180 ppmv and 1.3 ppmv respectively. VC was found in samples F2, F3, F3-Shallow, and F9 at 1,200 ppmv, 6.5 ppmv, 1.1 ppmv, and 1.1 ppmv respectively. Five samples were collected from the G transect, G1, G2, G7, G9, and G9-Shallow. Benzene was found in samples G1, G2, and G7 at 2.5 ppmv, 1.8 ppmv, and 0.79 ppmv respectively. PCE, TCE, and VC were found in sample G1 at 3.0 ppmv, 3.9 ppmv, and 8.9 ppmv respectively. PCE and TCE were found in sample G2 at 1.5 ppmv and 1.2 ppmv respectively. Seven samples were collected from the H transect: H2, H3, H3-Shallow, H5, H6, H7, and H8. Benzene was found in sample H2 at 16 ppmv. VC was found in sample H5 at 1.8 ppmv. Three samples were collected from transect I: I4, I5, and I6. Benzene was found in samples I4 and I5 at 120 ppmv and 1.6 ppmv respectively. PCE, TCE, and VC were found in sample I4 at 1.6 ppmv, 1.6 ppmv, and 760 ppmv respectively.

The data from the analysis of the Tenax/CMS samples was contoured to produce predicted concentration contours over the entire reservoir. Concentration contour maps for benzene, toluene, PCE, TCE, total DCE, and VC prepared from the Tenax/CMS results are presented in Figures 26 through 31. The map areas are constrained to within the reservoir boundary only.

For benzene, PCE, TCE, and VC the highest concentrations occur in the lower left quadrant defined by transect lines E and 5. This is true in general for all contaminants, and suggests a common source for the hydrocarbons. There are exceptions to this which may represent discreet disposal events restricted to a particular location.

5.3 SUMMATM Canister Confirmation of Vinyl Chloride

SUMMA canister samples were collected from nine locations on 27 August 1998 and analyzed using combined Gas Chromatography/ Mass Spectrometry (GC/MS). The complete analytical report is contained within Appendix G. This method of analyte detection provides definitive identification to confirm results generated in the field employing gas chromatography with a non-analyte specific

method of detection. Of the nine sample locations analyzed in the field, only three produced positive results for VC (B5, E9, and G5). All three of these samples also produced positive results when analyzed using GC/MS. For the remainder of the locations, all field results were non-detects for VC, whereas analysis of the SUMMA canisters produced positive results for locations C3, F7, G1, G5, G7, and H2. One location (F9) did not show the presence of VC by either method. However, the detection limit for the SUMMA canister analysis was 4.8 ppmv. Table 8 summarizes these analytical results.

Many factors influence analytical results including the date and time of sample collection, method of collection, and integrity of the sampling station. Although all samples were collected by withdrawal into a container under negative pressure, they were not collected at the same time. The sampling stations also were re-engineered prior to the initiation of sample collection to address potential influx of surface air into the piezometer wells with concomitant low bias of the analytical results. **Additionally, as mentioned previously, the field analytical results for VC are invalid due to the presence of analytes in the samples which interfere with the VC quantitation.** The influence of the factors identified above on the resulting data cannot be determined with precision.

Tables

Tables

TABLE 1. VOA, BNA, Pesticide/PCB and metals results (hits only) for the analysis of oil collected from extraction wells

Analyte	Units	WDI P1	WDI P2	WDI P3	WDI P4	WDI EX1	WDI VW9	Analyte	Units	WDI P1	WDI P2	WDI P3	WDI P4	WDI EX1	WDI VW9	Analyte	Units	WDI P1	WDI P2	WDI P3	WDI P4	WDI EX1	WDI VW9
Vinyl Chloride	mg/kg	-	48	-	44	-	-	1,2-Dichlorobenzene	mg/kg	150	-	220	-	120	96	Aroclor 1248	mg/kg	8.2	6.4	140	-	-	-
cis-1,2-Dichloroethene	mg/kg	780	470	-	60	27	29	1,4-Dichlorobenzene	mg/kg	56	-	200	-	-	-	Aroclor 1254	mg/kg	4.8	6.8	-	4.3	9.7	7.9
Benzene	mg/kg	310	170	-	190	200	140	1,2,4-Trichlorobenzene	mg/kg	-	-	75	-	-	-	Aroclor 1260	mg/kg	4.8	2.3	330	1.2	3.0	2.8
Trichloroethylene(TCE)	mg/kg	140	290	-	31	86	-	Naphthalene	mg/kg	780	890	630	900	770	810								
Toluene	mg/kg	1700	1000	44	950	1900	400	2-Methylnaphthalene	mg/kg	2300	1800	2400	2100	1800	1700	Aluminum, Total	mg/kg	65	14	116	25	98	101
Tetrachloroethene (PCE)	mg/kg	44	-	40	-	120	-	Acenaphthene	mg/kg	-	130	190	-	-	57	Arsenic, Total	mg/kg	1.7	0.6	2.4	0.6	3.3	2.5
Ethylbenzene	mg/kg	550	460	120	510	440	290	Dibenzofuran	mg/kg	-	-	86	-	-	-	Barium, Total	mg/kg	17.2	6.1	27.8	3.1	32.5	52.6
Xylenes,Total	mg/kg	3800	3000	630	3500	3800	2500	Fluorene	mg/kg	-	250	300	170	190	210	Cadmium, Total	mg/kg	-	-	-	-	2.8	-
Styrene	mg/kg	61	-	-	-	-	-	Pentachlorophenol (PCP)	mg/kg	-	-	280	-	-	-	Calcium, Total	mg/kg	388	409	336	243	530	338
Isopropylbenzene (Cumene)	mg/kg	160	160	80	170	140	110	Phenanthrene	mg/kg	490	700	820	330	430	480	Chromium, Total	mg/kg	10	3	85	4	11	7
n-Propylbenzene	mg/kg	290	290	150	320	260	200	Anthracene	mg/kg	120	120	660	-	95	61	Cobalt, Total	mg/kg	1	-	3	-	-	-
1,3,5-Trimethylbenzene	mg/kg	570	550	160	630	640	520	Fluoranthene	mg/kg	71	120	220	-	78	69	Copper, Total	mg/kg	4	-	2	-	2	3
1,2,4-Trimethylbenzene	mg/kg	1800	1600	920	1800	1800	1600	Pyrene	mg/kg	76	170	190	47 J	91	110	Iron, Total	mg/kg	49	16	58	17	38	69
sec-Butylbenzene	mg/kg	150	140	110	160	150	130	Benz(a)anthracene	mg/kg	-	70	53	-	38 J	38 J	Lead, Total	mg/kg	13	-	21	-	17	19
1,3-Dichlorobenzene	mg/kg	-	-	37	-	-	-	Chrysene	mg/kg	46 J	80	83	34 J	47 J	54	Magnesium, Total	mg/kg	20	15	26	15	30	38
4-Isopropyltoluene	mg/kg	210	200	160	240	230	200	Bis(2-ethylhexyl) Phthalate	mg/kg	150	-	640	-	71	-	Manganese, Total	mg/kg	12.6	1.8	5.6	1.4	4.2	1.6
1,4-Dichlorobenzene	mg/kg	76	-	230	-	56	-	Benzo(a)pyrene	mg/kg	-	47 J	-	-	-	-	Nickel, Total	mg/kg	21	23	20	20	21.5	22
n-Butylbenzene	mg/kg	190	160	150	190	170	160	Di-n-butylphthalate	mg/kg	-	-	34 J	-	-	-	Selenium, Total	mg/kg	3	2	4	3	2	2
1,2-Dichlorobenzene	mg/kg	180	-	240	-	150	-								Sodium, Total	mg/kg	6	6	6	2	18	53	
Naphthalene	mg/kg	500	600	370	530	430	480								Vanadium, Total	mg/kg	14	17	19	12	15	18	
Chloromethane	mg/kg	-	-	33	-	-	-								Zinc, Total	mg/kg	7	3	8	3	5	5	

TABLE 2. VOA, BNA and Pesticide/PCB results (hits only) for the analysis of oil collected from extraction wells

Sample Location				Sample Location				Sample Location			
Analyte	Units	EX-1 Barrel 1 Oil	EX-2 Composite Oil	Analyte	Units	EX-1 Barrel 1 Oil	EX-2 Composite Oil	Analyte	Units	EX-1 Barrel 1 Oil	EX-2 Composite Oil
cis-1,2-Dichloroethene	mg/kg	-	34	1,2-Dichlorobenzene	mg/kg	87 J	230 J	Dieldrin	mg/kg	0.49	5.1
Benzene	mg/kg	-	28	1,4-Dichlorobenzene	mg/kg	-	100 J	4,4'-DDE	mg/kg	0.68	3.2
Trichloroethylene(TCE)	mg/kg	-	58	1,2,4-Trichlorobenzene	mg/kg	-	210 J	4,4'-DDT	mg/kg	-	7.3
Toluene	mg/kg	98	310	Naphthalene	mg/kg	780	560	Methoxychlor	mg/kg	-	1.0
Ethylbenzene	mg/kg	71	180	2-Methylnaphthalene	mg/kg	1900	1900	Aroclor 1248	mg/kg	7.2	190
Xylenes,Total	mg/kg	230	1300	Dibenzofuran	mg/kg	-	110 J	Aroclor 1254	mg/kg	11	130
n-Propylbenzene	mg/kg	78	-	Fluorene	mg/kg	210 J	320	Aroclor 1260	mg/kg	4.6	310
1,3,5-Trimethylbenzene	mg/kg	250	210	Phenanthrene	mg/kg	420	650				
1,2,4-Trimethylbenzene	mg/kg	670	650	Anthracene	mg/kg	-	570				
sec-Butylbenzene	mg/kg	57	-	Di-n-butylphthalate	mg/kg	-	37 J				
4-Isopropyltoluene	mg/kg	90	-	Fluoranthene	mg/kg	70 J	210 J				
1,4-Dichlorobenzene	mg/kg	29	-	Pyrene	mg/kg	94 J	230 J				
n-Butylbenzene	mg/kg	-	140	Butyl Benzyl Phthalate	mg/kg	410	120 J				
1,2-Dichlorobenzene	mg/kg	82	200	Benz(a)anthracene	mg/kg	48 J	67 J				
1,2,4-Trichlorobenzene	mg/kg	-	180	Chrysene	mg/kg	80 J	140 J				
Naphthalene	mg/kg	770	710	Bis-(2-ethylhexyl) Phthalate	mg/kg	630	1000				
				Carbazole	mg/kg	-	81 J				

TABLE 3a. VOA and Metals Results (hits only) for the Analysis of Oil and Water Samples Collected from Baker Tanks

Analyte	Units	600 gallon Baker Tank	TRC's Large Baker Tank	Analyte	Units	600 gallon Baker Tank	TRC's Large Baker Tank
2-Butanone(MEK)	µg/L	27000 J	29000	Aluminum, Total	µg/L	16200	6580
cis-1,2-Dichloroethene	µg/L	5200 J	120	Antimony, Total	µg/L	749	539
4-Methyl-2-Pentanone	µg/L	58000	28000	Arsenic, Total	µg/L	469	-
Acetone	µg/L	22000 J	11000	Barium, Total	µg/L	4690	492
Toluene	µg/L	40000 J	110	Calcium, Total	µg/L	154000	11300
Tetrachloroethylene (PCE)	µg/L	7200 J	4.2 J	Chromium, Total	µg/L	3640	-
Benzene	µg/L	5900 J	55 J	Copper, Total	µg/L	569	-
Ethylbenzene	µg/L	21000 J	13 J	Iron, Total	µg/L	15800	2000
Methylene Chloride	µg/L	7900 J	11 J	Lead, Total	µg/L	3470	-
Bromodichloromethane	µg/L	1700 J	-	Magnesium, Total	µg/L	6160	3140
Trichloroethylene(TCE)	µg/L	11000 J	40 J	Manganese, Total	µg/L	725	-
Xylenes, Total	µg/L	150000	95 J	Nickel, Total	µg/L	1570	472
Vinyl Chloride	µg/L	-	16 J	Potassium, Total	µg/L	-	80700
Carbon Disulfide	µg/L	-	5.1 J	Sodium, Total	µg/L	43000	1560000
trans-1,2-Dichloroethene	µg/L	-	3.3 J	Vanadium, Total	µg/L	1030	-
2-Hexanone	µg/L	-	60 J	Zinc, Total	µg/L	1810	-

TABLE 3b. BNA & Pesticide/PCB Results for Organic Waste Sample and Water Sample Collected from Baker Tanks

Analyte	Sample ID		Analyte	Sample ID	
	600 gallon Baker Tank Organic Waste (mg/kg)	TRC's Large Baker Tank Water (µg/L)		600 gallon Baker Tank Organic Waste (µg/kg)	TRC's Large Baker Tank Water (µg/L)
Phenol	-	5100	Aroclor 1248	150000	46
2-Methylphenol	-	1200	Aroclor 1260	190000	57
4-Methylphenol	-	5600			
2,4-Dimethylphenol	-	2500			
1,2,4-Trichlorobenzene	96 J	-			
Naphthalene	370 J	120 J			
2-Methylnaphthalene	1600	370			
Acenaphthene	150 J	-			
Fluorene	230 J	100 J			
Phenanthrene	440 J	170 J			
Anthracene	350 J	120 J			
Fluoranthene	110 J	-			
Pyrene	120 J	-			
Bis(2-Ethylhexyl)phthalate	500	750			

TABLE 4. VOA, BNA, Pesticide/PCB, and Metals Results (hits only) for the Analysis of Oil Collected from Piezometer PB4-PVC

Analyte	Units	PB4-PVC	Analyte	Units	PB4-PVC	Analyte	Units	PB4-PVC
1,2-Dichloroethane	mg/kg	0.93	Naphthalene	mg/kg	270	Aroclor 1242	mg/kg	1.2 W
Benzene	mg/kg	18	2-Methylnaphthalene	mg/kg	660	Aroclor 1248	mg/kg	2.5
Toluene	mg/kg	8.8	Fluorene	mg/kg	75 J	Aroclor 1260	mg/kg	2.2
Ethylbenzene	mg/kg	64	Phenanthrene	mg/kg	180	Aluminum	mg/kg	250
Xylenes, Total	mg/kg	76				Arsenic	mg/kg	7.2
Isopropylbenzene (Cumene)	mg/kg	24				Barium	mg/kg	69
n-Propylbenzene	mg/kg	43				Calcium	mg/kg	670
1,3,5-Trimethylbenzene	mg/kg	4.8				Chromium	mg/kg	18
1,2,4-Trimethylbenzene	mg/kg	58				Cobalt	mg/kg	1
sec-Butylbenzene	mg/kg	24				Copper	mg/kg	16
4-Isopropyltoluene	mg/kg	14				Iron	mg/kg	570
n-Butylbenzene	mg/kg	40				Lead	mg/kg	34
1,2-Dichlorobenzene	mg/kg	0.75				Magnesium	mg/kg	99
Naphthalene	mg/kg	220				Manganese	mg/kg	13
1,2,3-Trichloropropane	mg/kg	1.0				Nickel	mg/kg	34
						Sodium	mg/kg	380
						Vanadium	mg/kg	30
						Zinc	mg/kg	14

Table 5a. VOC Results (hits only) in mg/L for Organic Product Samples Collected from Grid Piezometers

Analyte	Grid Point															
	C9	D9	E7	E9	F1	F7	F9	G1	G2	G3	G7	G9	H2	H4	I4	I5
Chloromethane	-	-	-	5.1 J	5.3 J	-	5 J	-	-	-	-	-	4.9 J	-	-	-
Vinyl Chloride	-	-	-	-	-	5.1 J	-	31 J	-	-	-	12 J	-	-	9.6 J	-
Bromomethane	-	-	-	25 J	69 J	-	20 J	27 J	-	-	-	18 J	12 J	18 J	26 J	24 J
Acetone	110 J	-	82 J	120 J	63 J	92 J	120 J	90 J	67 J	84 J	81 J	53 J	83 J	84 J	52 J	87 J
Methylene Chloride	-	31 J	-	-	-	-	-	-	47 J	51 J	44 J	-	-	-	25 J	18 J
2-Butanone	75 J	27 J	62 J	-	65 J	75 J	85 J	93 J	60 J	-	-	91 J	-	74 J	37 J	63 J
trans-1,2-Dichloroethene	-	-	-	-	-	-	-	23 J	-	-	-	-	-	-	-	-
cis-1,2-Dichloroethene	-	-	-	-	23 J	5.1 J	-	250	3.9 J	-	13 J	65 J	-	-	12 J	12 J
Benzene	62 J	19 J	58 J	43 J	110 J	60 J	310	-	110 J	140 J	43 J	63 J	260	170 J	34 J	80 J
TCE	-	-	-	-	16 J	-	-	660	170 J	-	21 J	500	-	-	-	14 J
Bromodichloromethane	-	-	32 J	21 J	-	21 J	110 J	77 J	33 J	-	32 J	38 J	-	-	-	-
Toluene	13 J	1.2 J	290	160 J	440	140 J	2700	1100	680	460	280	420	940	930	260	630
PCE	-	-	-	-	32 J	-	-	4000	780	-	24 J	72 J	4.5 J	-	-	11 J
Chlorobenzene	-	-	11 J	-	-	4.8 J	-	7.5 J	-	-	-	6.6 J	-	-	-	-
Ethylbenzene	190 J	69 J	370	160 J	250	230 J	1000	520	260	390	220	230 J	440	480	130 J	330
Xylenes, Total	230 J	-	1800	790	1600	830	8400	3800	2100	1700	1000	1300	2600	3200	860	2400

J- detected below the MDL

Table 5b. BNA Results (hits only) in mg/kg for Organic Product Samples Collected from Grid Piezometers

Analyte	Grid Point															
	C9	D9	E7	E8	E9	F1	F7	F9	G1	G2	G3	G7	H2	H4	I4	I5
1,2-Dichlorobenzene	-	-	-	-	-	-	-	-	-	-	150 J	-	-	-	-	
Naphthalene	330 J	-	580	960	590	590	460 J	1200	620	540	760	850	710	990	570	700
2-Methylnaphthalene	890	1100	2200	3000	2000	1600	1700	2600	1700	1400	1900	1900	1400	2100	1600	1800
Acenaphthene	-	-	130 J	-	140 J	-	120 J	-	-	-	110 J	-	-	-	-	
Fluorene	140 J	150 J	200 J	280 J	220 J	170 J	-	-	160 J	-	160 J	220 J	120 J	180 J	-	-
Phenanthrene	210 J	290 J	330 J	560	410 J	290 J	350 J	370 J	280 J	270 J	300 J	480	250 J	320 J	270 J	370 J
Anthracene	-	-	160 J	140 J	-	-	-	-	-	-	-	-	-	-	99 J	
Pyrene	-	-	-	130 J	-	-	-	-	-	-	130 J	-	-	100 J	95 J	
Bis(2-Ethylhexylphthalate)	380 J	110 J	-	190 J	-	190 J	-	-	140 J	160 J	-	-	-	300 J	-	

J- detected below the MDL

Table 5C. Pesticide/PCB Results (hits only) in µg/kg for Organic Product Samples Collected from Grid Piezometers

Analyte	Grid Point															
	C9	D9	E7	E8	E9	F1	F7	F9	G1	G2	G3	G7	H2	H4	I4	I5
Aroclor 1248	6820 W	17000	21600	6400 W	16800 W	3840	11000	3540	2200 W	13400	13400	4360	400 W	3380	61000	8520
Aroclor 1260	4800	4200	22000	3300	11000	1100	6100	460 J	1300	6400	4300	3200	470 J	590 J	78400	15000

W-weathered

J- detected below the MDL

Table 5d. Metals Results (hits only) in mg/L for Organic Product Samples Collected from Grid Piezometers

Grid Point	C9	D9	E7	E9	F1	F7	F9	G1	G2	G3	G7	G9	H2	H4	I4	I5
Aluminum	5.4	6.47	13.5	9.51	6.26	14.8	6.07	8.06	10.8	4.05	28	16.5	6.34	6.1	6.23	11.4
Antimony	0.399	0.35	0.895	-	0.639	0.528	0.581	0.418	-	-	0.701	0.524	-	-	0.358	-
Arsenic	0.709	2.45	1.33	0.82	0.742	0.877	0.497	0.708	0.699	0.445	7.63	1.71	-	-	1.03	0.935
Barium	1.5	3.29	8.57	5.26	2.74	11.6	0.782	3.11	3.26	0.673	16	16.6	0.759	1.05	3.02	4.75
Cadmium	0.233	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	41.1	16.8	41	76.3	56	105	19.2	58.1	95.8	10.8	338	135	27.2	29.5	37.4	114
Chromium	0.233	0.43	1.55	1	0.402	3.05	-	0.353	0.778	0.196	2.64	1.23	-	-	0.707	1.06
Copper	-	-	0.499	-	0.504	0.35	-	1.01	0.631	-	1.59	0.808	-	0.193	1.23	0.741
Iron	26.4	39.8	47.5	14.4	21.7	45.7	6.13	21.8	21.7	8.14	102	28	3.82	6.1	17.3	36
Lead	2.88	5.19	7.16	2.28	9.1	5	0.826	11.5	5.97	1.32	22.9	14.5	4.17	1.84	4.4	5.94
Magnesium	3.15	3.16	8.57	5.8	2.42	7.71	3.2	-	4.44	-	26.4	5.94	3.93	4.44	3.73	9.1
Manganese	0.189	0.22	1.01	0.188	0.184	1.17	-	0.203	0.604	0.127	6.83	0.383	-	0.087	0.232	0.825
Nickel	0.708	0.474	0.801	0.616	0.827	0.877	0.605	0.999	0.787	0.376	1.34	0.92	0.929	0.72	0.545	0.802
Potassium	-	-	-	-	-	-	-	-	-	-	27.9	-	-	-	-	42.9
Sodium	48.2	-	71.8	40.1	24.3	22.9	-	-	4.55	-	321	43	30.7	49.5	44.5	635
Vanadium	1.43	1.39	1.45	1.08	1.01	1.1	0.511	0.648	0.795	0.637	1.82	1.02	0.624	0.554	0.577	0.605
Zinc	2.75	4.93	0.915	0.889	-	3.11	-	-	0.937	-	7.49	6.24	-	-	1.55	3.46

Table 6a. VOC Results (hits only) in µg/L for Water Samples Collected from Grid Piezometers

Analyte	Grid Point												
	B6	B7	B8	C4	C5	C8	D6	E3	H7	H8	I7	VW-55	
Vinyl Chloride	7.8	0.37	0.11	-	1.2	0.15 J	0.150 J	0.150 J	0.027 J	0.022 J	0.022 J	-	
Acetone	2.6	1.1	1.8	0.097 J	0.49 J	1.6	0.190 J	1.6	0.33	1.1	0.16 J	-	
cis-1,2-Dichloroethene	16	0.162 J	-	-	3.5	0.048 J	0.086 J	0.083 J	-	-	-	-	
2-Butanone	3.7	0.35	0.028 J	-	0.260 J	0.13 J	-	0.36	-	-	-	-	
1,1,1-Trichloroethane	-	-	0.005 J	-	-	-	-	-	-	-	-	-	
Benzene	0.96 J	0.42	0.16	0.090 J	0.52	0.27	0.32	0.110 J	0.053 J	-	-	-	
TCE	0.34 J	-	-	-	0.100 J	-	-	-	-	-	-	-	
4-Methyl-2-pentanone	1.1	0.33	-	-	0.420 J	-	-	0.047 J	-	-	-	-	
Toluene	1.3	0.38	0.077	-	0.54	0.28	0.37	0.069 J	0.037 J	-	-	-	
PCE	0.2	-	-	-	0.14 J	-	-	-	-	-	-	-	
Ethylbenzene	0.17	0.056 J	0.034 J	-	0.078 J	0.033 J	0.052 J	-	0.025 J	-	-	-	
Xylenes, Total	1.2	0.39	0.12	-	0.49 J	0.190 J	0.55	0.058 J	-	-	-	-	
trans-1,2-Dichloroethene	0.390 J	-	-	-	-	-	-	-	-	-	-	-	

J- detected below the MDL

Table 6b. BNA Results (hits only) in µg/L for Water Samples Collected from Grid Piezometers

Analyte	Grid Point										
	B6	B7	B8	C4	C5	C8	E3	H7	H8	I7	VW-55
Phenol	2700	800	72 J	-	600	180	180	-	-	-	-
2-Methylphenol	-	60 J	-	-	-	39	20	-	-	-	-
4-Methylphenol	1800	1000	-	-	680	170	650	-	-	24 J	-
2,4-Dimethylphenol	630	520	18 J	-	550	170	55	24 J	-	-	-
2,4-Dichlorophenol	-	-	-	-	-	11 J	-	-	-	-	-
Naphthalene	130 J	100 J	-	620	410 J	48	18 J	-	-	15 J	-
2-Methylnaphthalene	160 J	150	74 J	810	890	34	16 J	23 J	-	18 J	-
Phenanthrene	-	-	-	300 J	180 J	-	-	-	-	-	-
Pyrene	-	-	-	120 J	-	-	-	-	-	-	-
Bis(2-Ethylhexylphthalate)	-	-	-	-	-	-	-	-	14 J	16 J	-

J- detected below the MDL

Table 6c. Pesticide/PCB Results (hits only) in µg/L for Water Samples Collected from Grid Piezometers

Analyte	Grid Point										
	B6	B7	B8	C4	C5	C8	E3	H7	H8	I7	VW-55
p,p'-DDE	-	-	-	-	-	48	-	-	-	-	-
Aroclor 1248	-	-	-	-	-	-	14	77 W	-	-	-
Aroclor 1260	-	-	-	-	-	-	0.8 W	5.5 W	-	-	-

W-weathered

Table 6d. Metals Results (hits only) in mg/L for Organic Product Samples Collected from Grid Piezometers

Grid Point	B6	B7	B8	C4	C5	C8	D6	E3	H7	H8	I7	VW-55
Aluminum	109	63.2	148	9.71	50.2	40.1	741	35.5	23.5	403	24.3	7.69
Antimony	0.578		0.588				0.822				0.519	
Arsenic	6.93		0.504		0.839		4.17					
Barium	15.3	1.36	14.5	0.477	2.9	1.15	166	3.04	0.807	6.73	0.518	0.242
Beryllium		3.14										
Cadmium							0.297					
Calcium	480		384	96.9	501	181	1590	282	155	881	81.3	65.6
Chromium	0.691	205	0.557		0.24		6.59			0.739		
Cobalt		0.401					0.865			0.366		
Copper	0.637		0.459				5.59			0.685		
Iron	163		278	3.91	69.9	45.5	1620	54.3	24.8	645	36	2.39
Lead	3.79	86.3	8.15		1.72	1.49	63.2	1.48	0.259	2.28		
Magnesium	58.9	0.948	154	83.4	33.2	18.6	58.9	86.8	37.8	258	14.7	36.2
Manganese	3.61	31.1	5.56	0.222	1.35	0.937	43.8	2	0.939	16.3	0.577	0.594
Mercury		1.96					36.2			0.119		
Nickel	1.08		0.337		0.385		2.48			0.582		
Potassium	57.2	0.528	89.7	43	45.8	31.5	308	55.6	54.6	205	71.1	
Selenium		52.5										
Silver												
Sodium	1340	1020	1360	1280	1070	692	1570	828	915	937	774	178
Thallium												
Vanadium	1.27	0.773	0.579		0.413		2.8			1.39		
Zinc	2.95	1.23	2.92		1.88		31.3	1.64		5.55	1.67	

Table 7a. Results of Tenax/CMS Cartridge Analyses in ppbv for Soil Gas Samples Collected from Grid Piezometers

Grid Point	Analyte					
	Benzene	Ethylbenzene	Toluene	m & p-Xylenes	o-Xylene	Dibromomethane
C9	360	110	71	110	17 J	-
C9	290	45	43	48	8 J	-
D3	50	12 J	36	26	16 J	-
D4	61	3 J	20 J	8 J	3 J	-
D5	340	21	66	37	18 J	-
D9	-	140	160	16 J	-	-
F7 Shallow	96	30	73	71	20	-
F8	-	-	-	-	-	-
G3	-	-	-	-	-	-
G8	-	-	-	-	-	-
G9	47	9 J	55	21	-	-
G9	-	19	110	41	17	-
G9 Shallow	14	2 J	12	5 J	2 J	-
G9	-	-	-	-	-	-
H3	-	-	-	-	-	-
H4	-	-	-	-	-	-
I7	27 E	6	26 E	20	11	-

J- Detected below the detection limit E- Exceeded calibration range

Table 7a (Continued). Results of Tenax/CMS Cartridge Analyses in ppbv for Soil Gas Samples Collected from Grid Piezometers

Grid Point	TCE	PCE	VC	1,1,2-DCE	c-1,2-DCE	Chloromethane	1,1-DCA	1,2-DCA	1,1,1-TCA	CCl3	CCl4	1,2-Dichloropropane
C9	11 J	2 J	75	-	NA	11 J	6 J	-	12 J	-	-	NA
C9	7 J	-	87	-	NA	7 J	-	-	9 J	-	-	NA
D3	3 J	5 J	-	-	NA	16 J	-	-	-	-	-	NA
D4	7 J	-	6 J	-	NA	14 J	-	-	11 J	-	-	NA
D5	43	4 J	110	-	NA	-	-	-	29	-	-	NA
D9	-	-	1100 E	-	NA	-	-	-	8 J	-	-	NA
F7Shallow	19	2 J	11	-	NA	6 J	-	-	19	-	-	NA
F8	-	-	-	-	NA	-	-	-	-	-	-	NA
G3	-	-	-	-	NA	-	-	-	-	-	-	NA
G8	-	-	-	-	NA	-	-	-	-	-	-	NA
G9	11	2 J	30	-	NA	5 J	-	-	9 J	-	-	NA
G9	8 J	4 J	240	-	NA	12	-	-	5 J	-	-	NA
G9Shallow	3 J	5 J	-	-	NA	-	-	-	3 J	-	-	NA
G9	-	-	-	-	NA	-	-	-	-	-	-	NA
H3	-	-	-	-	NA	-	-	-	-	-	-	NA
H4	-	-	-	-	NA	-	-	-	-	-	-	NA
I7	1 J	1 J	39 E	-	NA	-	-	1 J	02 J	-	-	NA

J- Detected below the detection limit E- Exceeded calibration range

Table 7b. Results of Tedlar Bag Analysis in ppbv of Desorbed Tenaz/CMS Cartridges Collected at Grid Piezometers

Grid Point	Analyte					
	Benzene	Ethylbenzene	Toluene	m & p-Xylenes	c-Xylene	Dibromomethane
A4	-	13000	13000		30000	11000
A4Shallow	-	120 J	84 J		560	230 J
A4	-	280	110 J		1000	370
A5	6 J	-	14 J		3 J	-
B4	-	-	6 J		3 J	-
B5	820 E	120	1100 E		290	88
B7	83	2 J	28		4 J	2 J
B8	-	-	7 J		3 J	-
C3	1 J	0.4 J	4		1 J	0.5 J
C4	3 J	0.7 J	11		3 J	0.8 J
C4	1 J	0.5 J	7		2 J	0.6 J
C5	18 J	-	15 J		3 J	-
C8	3 J	-	10 J		4 J	-
C9	220	380	68		380	53
D3Shallow	-	-	2 J		-	-
D3Shallow	3 J	0.5 J	6		2 J	0.6 J
D3	3 J	-	4 J		3 J	-
D5	94	7 J	7 J		14 J	9 J
D6	45	16 J	73		18 J	11 J
D6	8 J	5 J	23		27	9 J
D7	320 J	-	140 J		47 J	-
D8	74	4 J	23		10 J	3 J
D9	860 E	140	24		13 J	11 J
E1	69	14 J	35		15 J	12 J
E2	22000 E	17000 E	54000 E		48000 E	18000 E
E2	1100 E	1400 E	3300 E		3400 E	1700 E
E3	17 J	15 J	56		89	22
E5	94000 E	4900	130000 E		16000	3700
E7	1100 E	1200 E	2100 E		2100 E	820 E
E8	580 E	180	950 E		570 E	200
E9	31000 E	12000 E	38000 E		28000 E	10000
E9	83	41	100		130	45
F1	670	-	210		20 J	-
F2	120000 E	27000	190000 E		86000 E	25000
F3	1800 E	310	1400 E		320	72
F3	36000 E	13000 E	32000 E		26000 E	6300
F3Shallow	130	11 J	35		15 J	6 J
F9	1900	150 J	2300		850	160 J
F9	130	1500 E	2000 E		3200 E	1700 E
F9	18000 E	4900	31000 E		17000 E	4700
F9	58	2200 E	1700 E		3500 E	2500 E
G1	2500 E	680 E	4000 E		1800 E	570 E
G2	1800 E	510 E	3200 E		1800 E	510 E
G7	780 E	650 E	2000 E		1600 E	870 E
G9Shallow	-	-	48 J		-	-
G9	11 J	4 J	44		17 J	5 J
G9Shallow	310 J	160 J	960		750	190 J
H2	16000 E	4700	20000 E		14000 E	5100 E
H3	21	3 J	28		15 J	4 J
H3Shallow	5 J	-	13 J		5 J	-
H5	23	-	12 J		-	-
H6	11 J	-	11 J		4 J	-
H7	350	44	230		43	22
H8	2 J	-	6 J		3 J	-
H4	120000 E	21000	170000 E		80000 E	18000
I5	1600 E	520 E	3300 E		1500 E	440
I6	150	380	130		550 E	330

J-Detected Below the Detection Limit

E-Exceeded calibration range

Table 7b (Continued). Results of Tedlar Bag Analysis in ppbv of Desorbed Tenaz/CMS Cartridges Collected at Grid Piezometers

Grid Point	Analyte											
	TCE	PCE	Vinyl Chloride	t-1,2-DCE	c-1,2-DCE	Chloromethane	1,1-DCA	1,2-DCA	1,1,1-TCA	CCl3	CCl4	1,2-Dichloropropane
A4	-	-	340 J	-	NA	620 J	-	-	-	-	-	NA
A4Shallow	-	-	-	-	NA	-	-	-	-	-	-	NA
A4	-	-	-	-	NA	-	-	-	-	-	-	NA
A5	-	-	20	-	NA	-	-	-	-	-	-	NA
B4	-	-	2 J	-	NA	2 J	-	-	-	-	-	NA
B5	200	130	2200 E	-	NA	-	-	-	-	-	-	NA
B7	13 J	8 J	730 E	-	NA	-	-	-	-	-	-	NA
B8	-	-	150	-	NA	-	-	-	-	-	-	NA
C3	0.7 J	0.3 J	-	-	NA	3	-	-	-	-	-	NA
C4	2 J	1 J	10	-	NA	7	-	-	-	-	-	NA
C4	1 J	0.7 J	-	-	NA	1 J	-	-	-	-	-	NA
C5	15 J	10	1300 E	17 J	NA	11 J	-	-	-	-	-	NA
C8	-	-	-	-	NA	-	-	-	-	-	-	NA
C9	-	-	32	-	NA	-	-	-	-	-	-	NA
D3Shallow	-	-	-	-	NA	-	-	-	-	-	-	NA
D3Shallow	0.6 J	-	7	-	NA	-	-	-	-	-	-	NA
D5	-	-	-	-	NA	-	-	-	-	-	-	NA
D5	-	-	46	-	NA	-	-	-	-	-	-	NA
D6	17 J	23	22	-	NA	-	-	-	-	-	-	NA
D6	-	-	-	-	NA	4 J	-	-	-	-	-	NA
D7	170 J	36 J	13000 E	-	NA	-	-	-	-	-	-	NA
D8	3 J	-	470	12 J	NA	-	-	-	-	-	-	NA
D9	-	-	160	-	NA	-	-	-	-	-	-	NA
E1	8 J	6 J	44	-	NA	-	-	-	-	-	-	NA
E2	1900	9800	4400	-	NA	-	-	-	200 J	-	-	NA
E2	140	730 E	210	-	NA	-	-	-	-	-	-	NA
E3	-	10 J	19 J	-	NA	-	-	-	-	-	-	NA
E5	130000 E	4200	220000 E	3100	NA	-	-	-	640 J	-	-	NA
E7	14 J	-	830 E	-	NA	-	-	-	-	-	-	NA
E8	1500 E	69	1200 E	34	NA	-	-	-	-	-	-	NA
E9	-	-	120000 E	-	NA	-	-	-	-	-	-	NA
E9	-	-	50	-	NA	-	-	-	-	-	-	NA
F1	58 J	37 J	140	-	NA	-	-	-	-	-	-	NA
F2	180000 E	130000 E	1200000 E	19000	NA	-	-	-	-	-	-	NA
F3	1300 E	440	6500 E	250	NA	-	-	-	-	-	-	NA
F3	740	160 J	94000 E	-	NA	-	-	-	-	-	-	NA
F3Shallow	130	100	1100 E	27	NA	-	-	-	-	-	-	NA
F9	-	-	180 J	-	NA	-	-	-	-	-	-	NA
F9	-	-	1100 E	-	NA	-	-	-	-	-	-	NA
F9	-	-	410	-	NA	-	-	-	-	-	-	NA
F9	-	-	620 E	-	NA	-	-	-	-	-	-	NA
G1	3900 E	3000 E	8900 E	510 E	NA	-	-	-	-	-	-	NA
G2	1500 E	1200 E	100	32	NA	-	-	-	-	-	-	NA
G7	200	110	19 J	-	NA	-	-	-	-	-	-	NA
G9Shallow	-	64 J	-	-	NA	-	-	-	-	-	-	NA
G9	-	-	-	-	NA	-	-	-	-	-	-	NA
G9Shallow	-	44 J	-	-	NA	270 J	-	-	-	-	-	NA
H2	-	-	66 J	-	NA	600 C	-	-	-	-	-	NA
H3	7 J	9 J	38	-	NA	-	-	-	-	-	-	NA
H3Shallow	-	-	9 J	-	NA	-	-	-	-	-	-	NA
H5	3 J	-	1800 E	-	NA	-	-	-	-	-	-	NA
H6	4 J	3 J	-	-	NA	-	-	-	-	-	-	NA
H7	14 J	11 J	160	-	NA	-	-	-	-	-	-	NA
H8	-	-	45	-	NA	-	-	-	-	-	-	NA
I4	-	-	760000 E	-	NA	-	-	-	-	-	-	NA
I5	180	35	250	-	NA	-	-	-	-	-	-	NA
I8	0 J	-	420	-	NA	-	-	-	-	-	-	NA

J- Detected Below the Detection Limit E-Exceeded calibration range

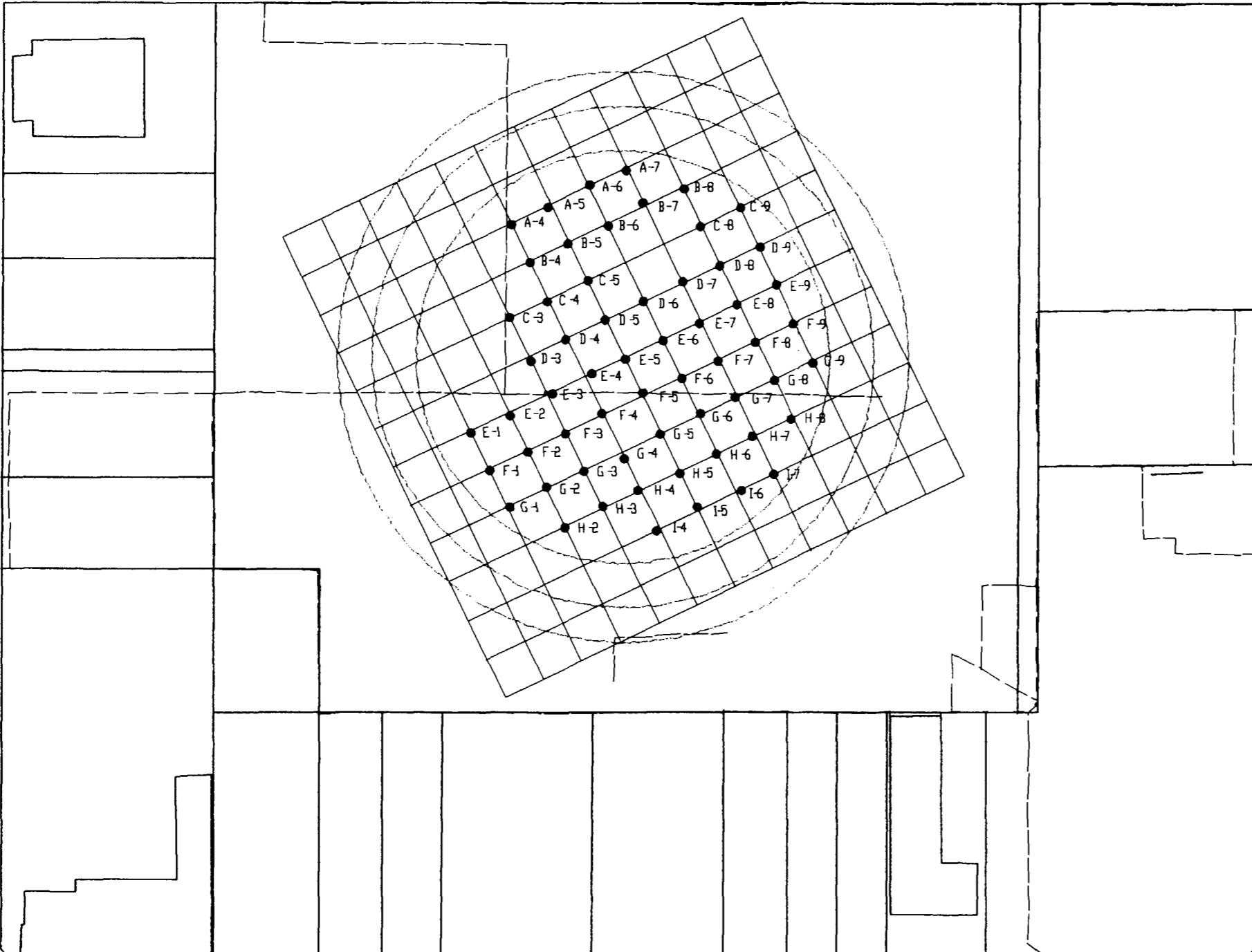
Table 8. Vinyl Chloride Results - Tedlar Bag Screening and Confirmatory Analysis by Summa Canisters

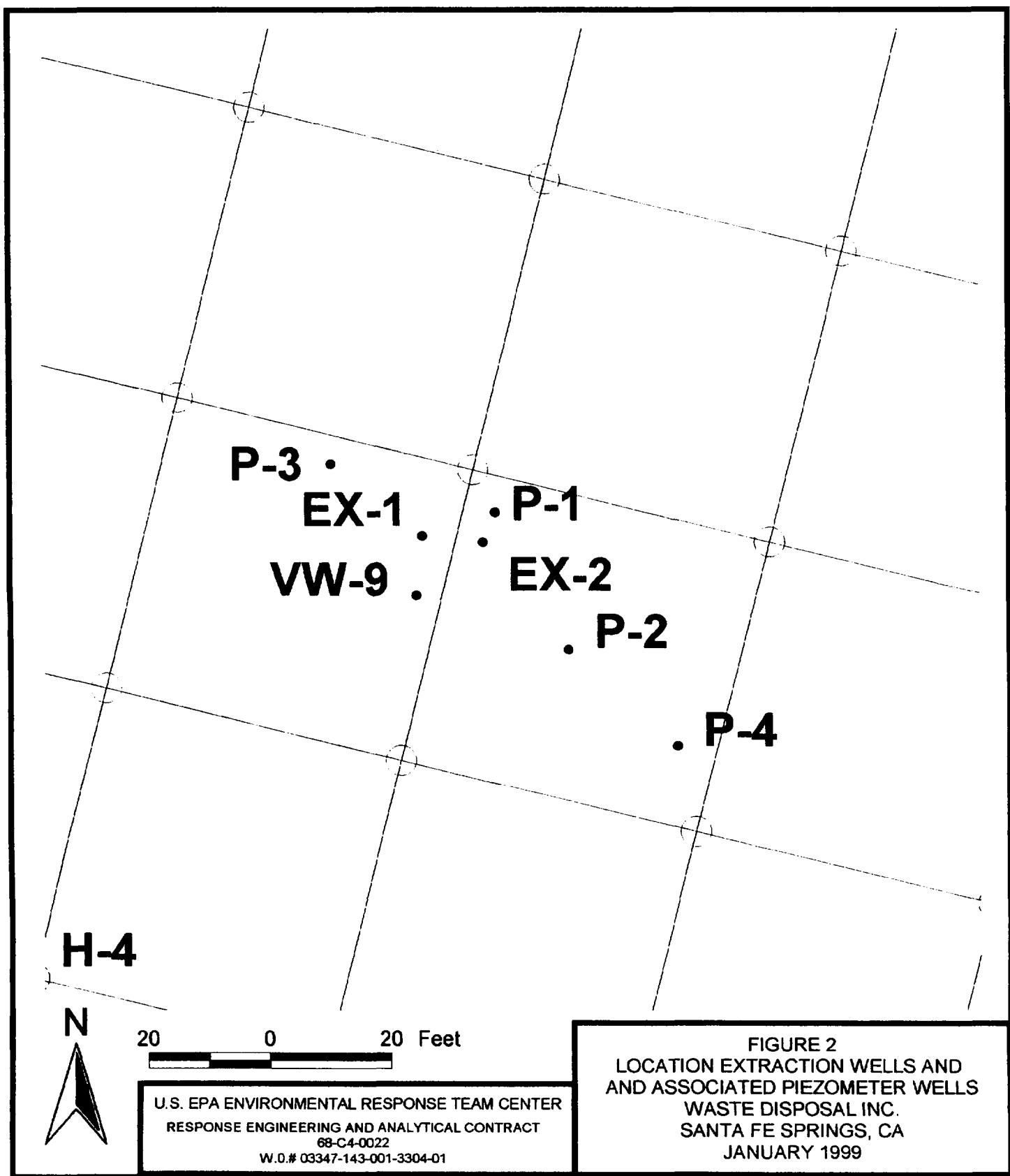
Sample Location	SAMPLING DATE(Voyager)	VCI (Screening)	Date Summa Sampled	Date Summa Analyzed	Quantitation Limit (ppbv)	VC (Confirmation)
B5	08/25/98	3.47	08/27/98	09/10/98	1600	1100 J
C3	08/24/98	ND	08/27/98	09/10/98	24	16 J
E9	08/19/98	2.783	08/27/98	09/09/98	1100	3300
E9 Rep	NA	NA	08/27/98	09/10/98	1100	3100
F7	08/20/98	ND	08/27/98	09/09/98	12	26
F9	08/19/98	ND	08/27/98	09/10/98	4800	4800 U
G1	08/24/98	ND	08/27/98	09/10/98	4800	53000
G5	08/26/98	87.00	08/27/98	09/09/98	4800	21000
G7	08/21/98	ND	08/27/98	09/10/98	2700	45000
H2	08/24/98	ND	08/27/98	09/09/98	9600	3500 J

ND- Not Detected NA- Not Available

Figures

Figures





* To pump

Ground Surface
Tubing to connect
to Texax/CMS and
Summa Canister
Summa Canister
Outer 1.5"
I.D. Casing
1-4" Above
Ground Surface

Texax/CMS tube or
Summa canister

Gas Tight Valve

1-4" Above
Ground Surface

Top of Present Day Reservoir

Fill Material

Approximately 3'

1" I.D. PVC screen

6-22' or
Screen

Note:

Texax/CMS samples are collected from the valve
at the top of the casing. Summa canister samples
are also collected through the valve at the top of
the casing.

20'

18'

16'

14'

12'

10'

8'

6'

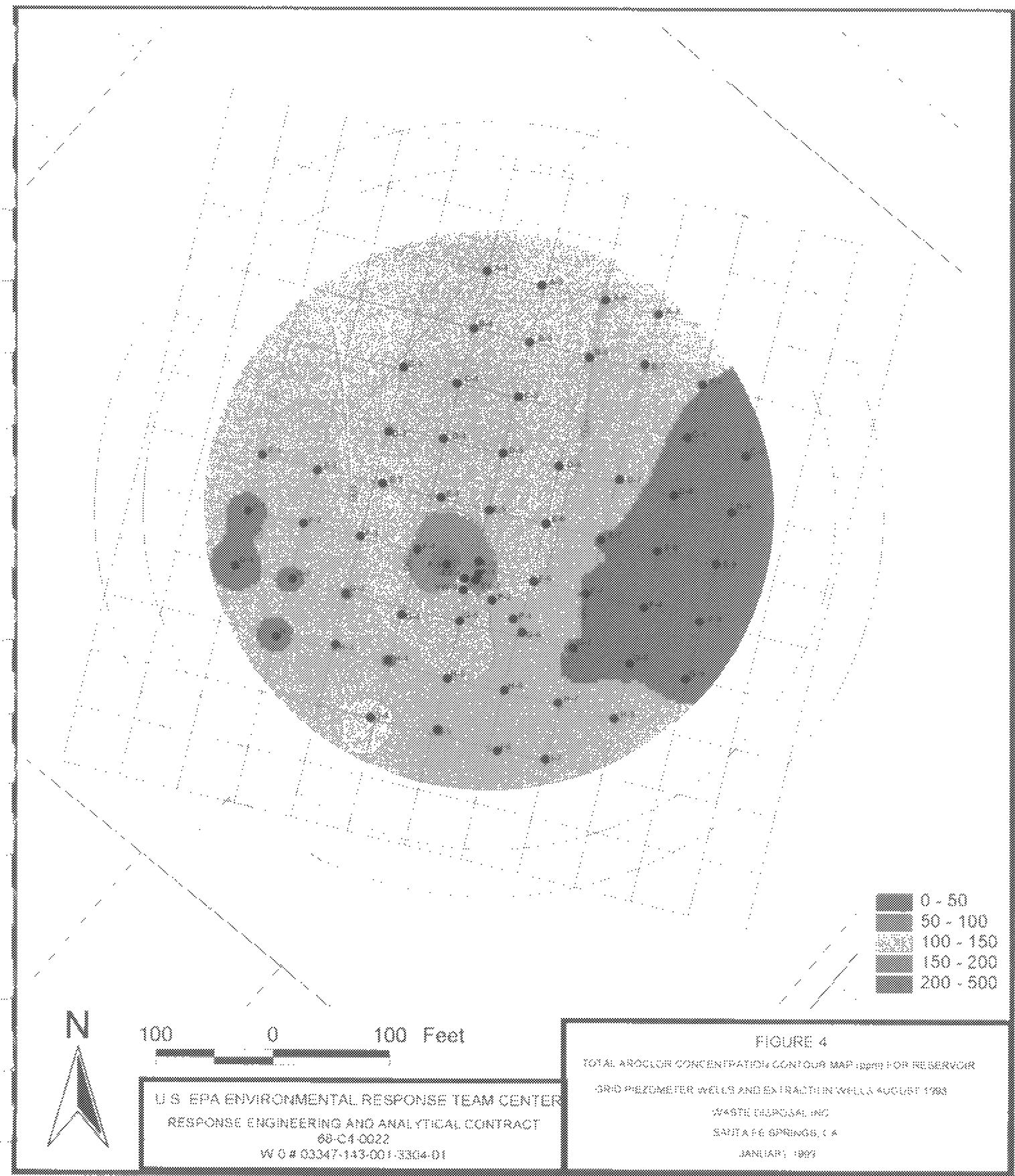
4'

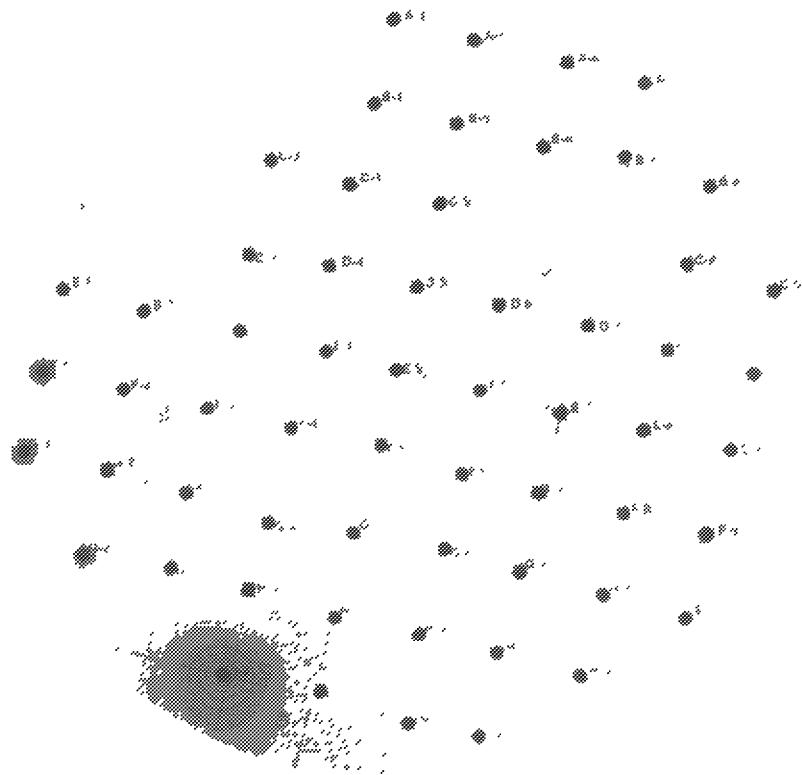
2'

0'

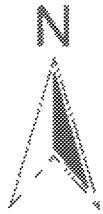
U.S. EPA Document: Recovery Plan for Texax
Recovering Hydrocarbons and Arsenic Contaminants
AS-123456789012345601

Appendix A, Figure 3
Reservoir Cross Section
Showing PVC Pressure Casing
January 1993





卷之三



100 0 100 Feet

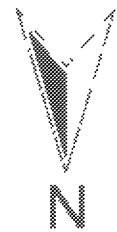
WEBSITE: <http://www.english-test.net> / E-MAIL CENTER:
WEBSITE: <http://www.english-test.net/contact/> / TEL: +381 61 202 000
E-MAIL: info@english-test.net

1. *Chlorophytum* L. 2. *Cladonia* L. 3. *Cladonia* L.
4. *Cladonia* L. 5. *Cladonia* L. 6. *Cladonia* L.
7. *Cladonia* L. 8. *Cladonia* L. 9. *Cladonia* L.
10. *Cladonia* L. 11. *Cladonia* L.

100 320
80 130
60 60
50 50
40 22
30 6

100 320
80 130
60 60
50 50
40 22
30 6

FIGURE 6



N
▲

50 - 100
100 - 150
150 - 200
200 - 250
250 - 300
300 - 1000

90 0 90 180 Feet

FIGURE 7
ETHYLBENZENE CONCENTRATION CONTOUR MAP (mg/L)
FOR RESERVOIR ORGANIC LIQUID SAMPLES
AUGUST 1998

WASTE DISPOSAL, INC.
SANTA FE SPRING, CA
JANUARY 1999

U.S. EPA ENVIRONMENTAL RESPONSE TEAM CENTER
RESPONSE ENGINEERING AND ANALYTICAL CONTRACT
68-C4-0022
W.O. # 03347-143-001-3304-01

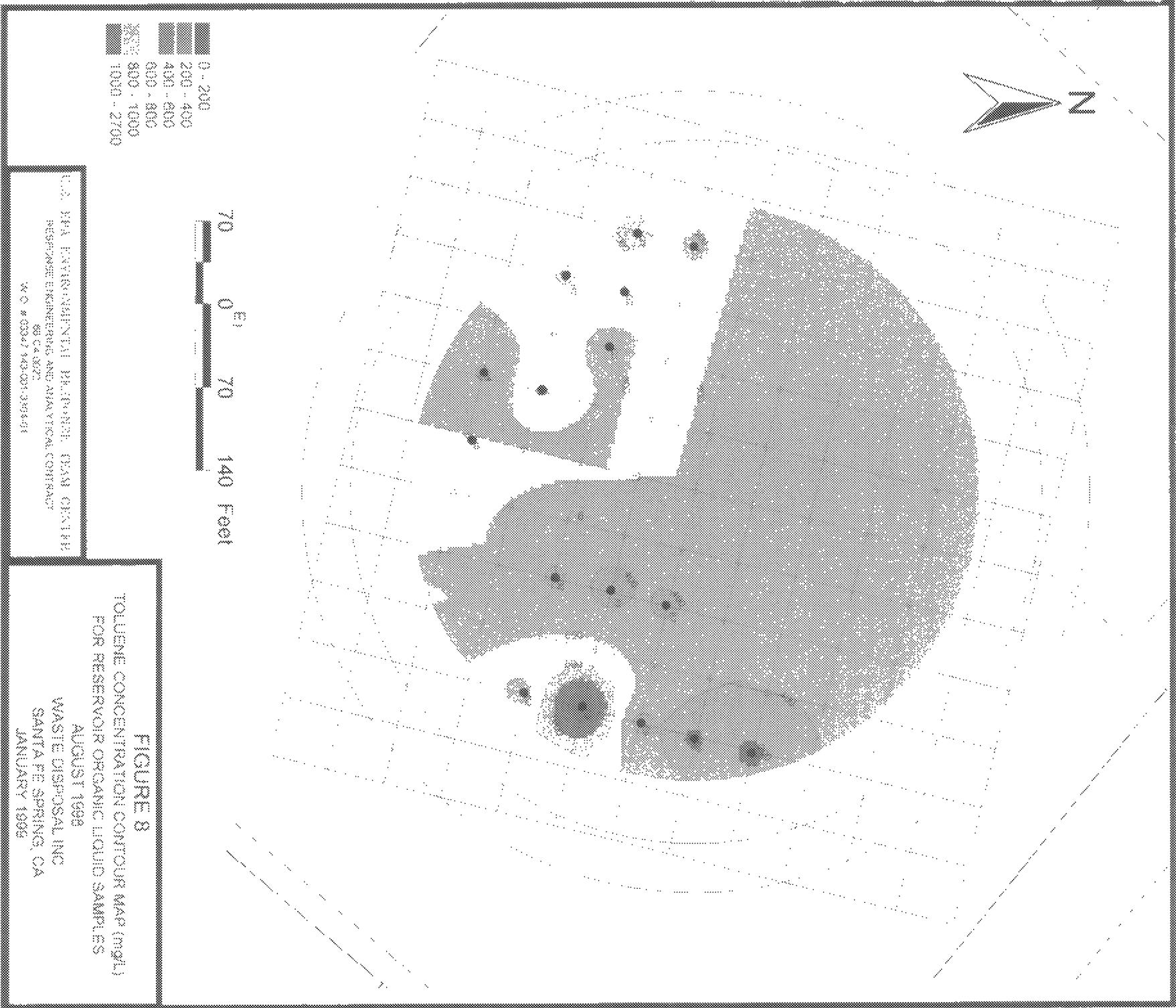
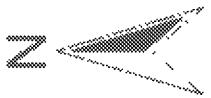
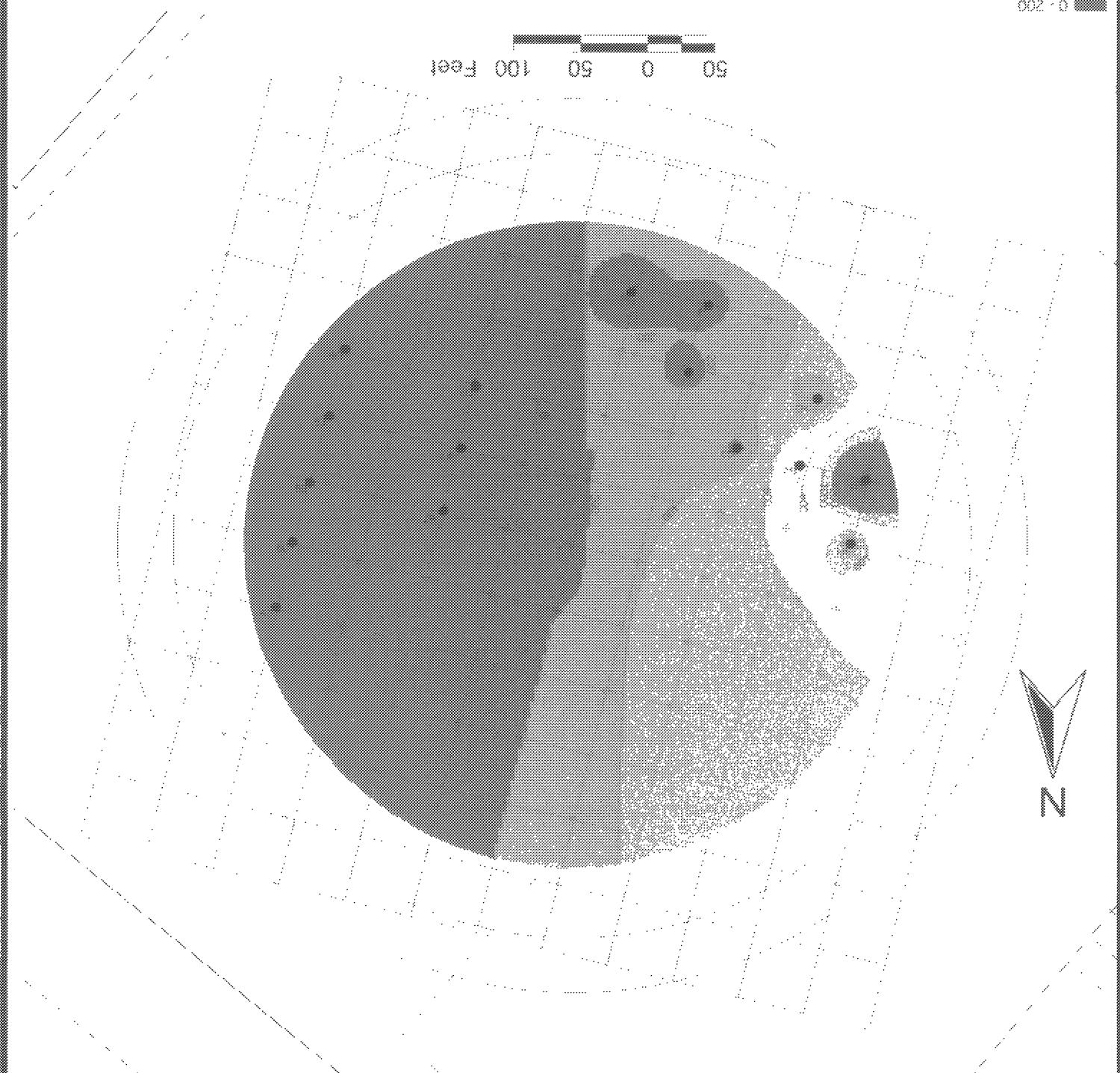
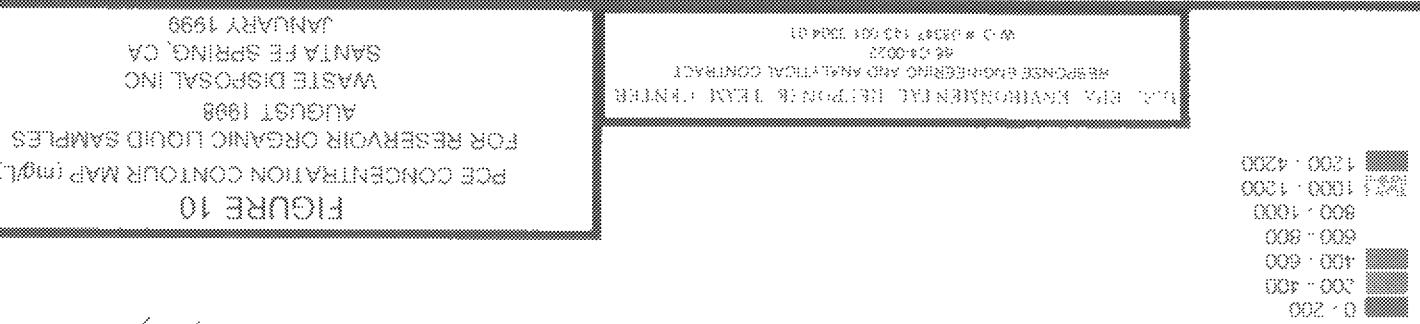
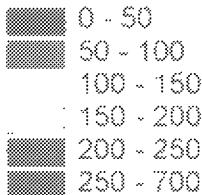
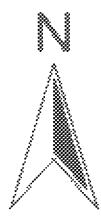


FIGURE 9
TYPICAL SPATIAL PATTERNS OF THE
VOLCANIC HAZARD ZONING FOR
THE VOLCANOES OF THE
SANTORINI ISLANDS







50 0 50 100 150 Feet

E.C. EPA ENVIRONMENTAL RESPONSE TEAM CENTER
RESPONSE ENGINEERING AND ANALYTICAL CONTRACT
86-C4-0021
W.O. # 03347 143-QM 380461

FIGURE 11

TCE CONCENTRATION CONTOUR MAP (mg/L)
FOR RESERVOIR ORGANIC LIQUID SAMPLES

AUGUST 1998

WASTE DISPOSAL INC
SANTA FE SPRING, CA
JANUARY 1998

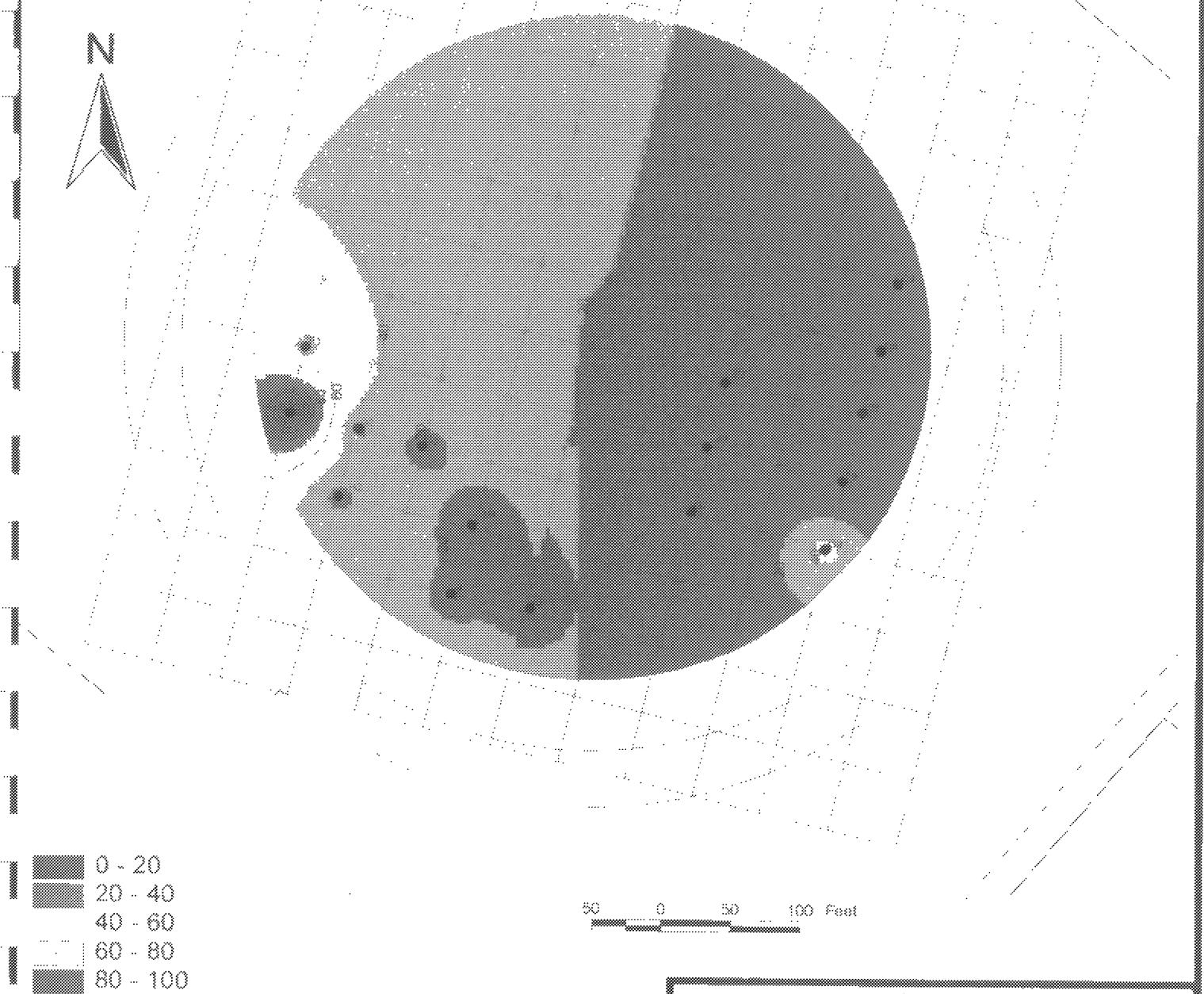
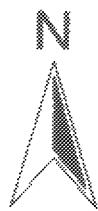


FIGURE 12
TOTAL DCE CONCENTRATION CONTOUR MAP (mg/L)
FOR RESERVOIR ORGANIC LIQUID SAMPLES
AUGUST 1988
WASTE DISPOSAL INC
SANTA FE SPRING, CA
JANUARY 1999

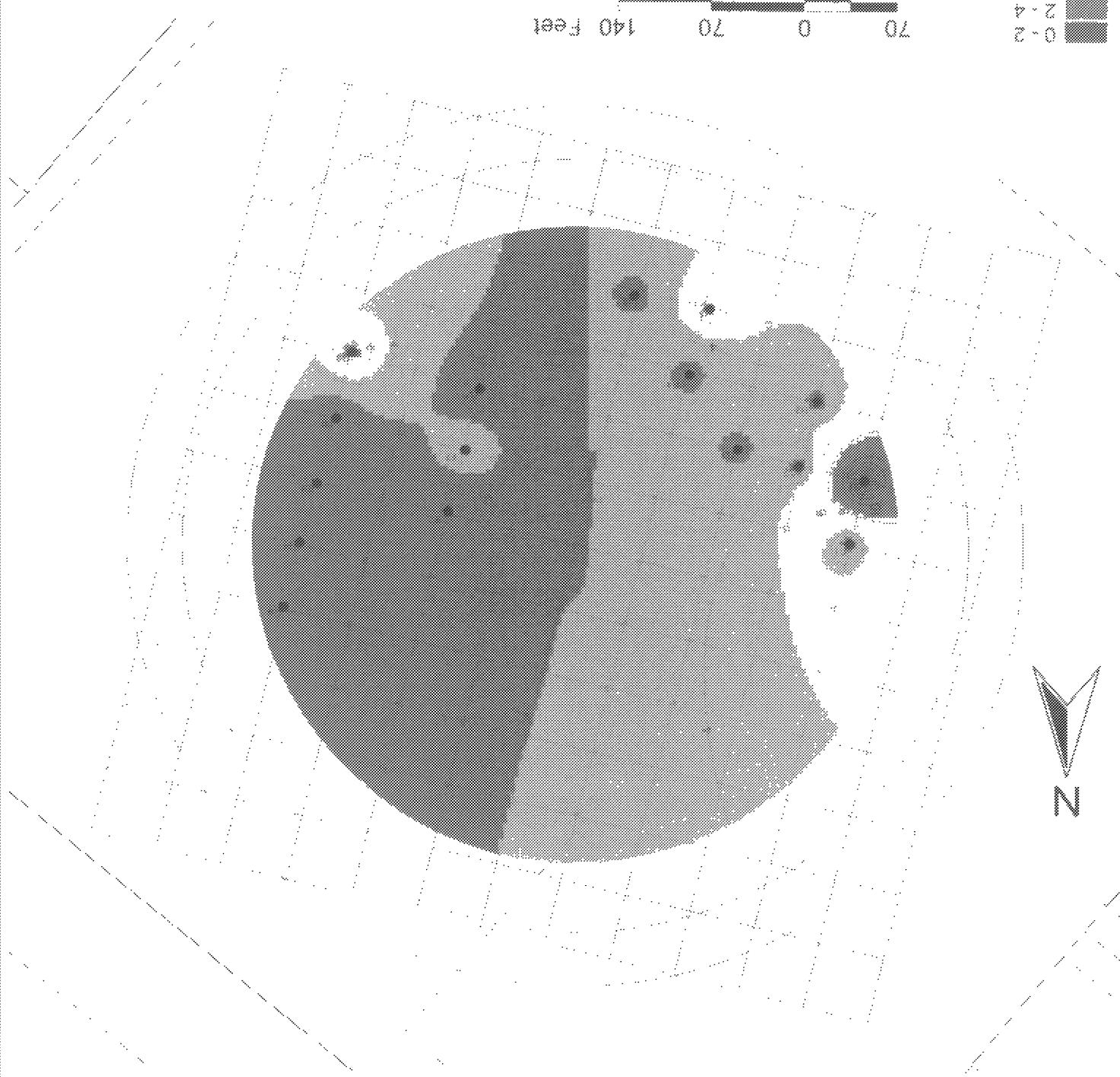
EPA ENVIRONMENTAL RESPONSE TEAM CENTER
RESPONSE ENGINEERING AND ANALYTICAL CONTRACT
ME-04-0022
W.O. # 03347-183-H01 5504-01

FIGURE 13
VC CONCENTRATION CONTROL MAP (mg/l)
FOR RESERVOIR ORGANIC LIQUID SAMPLES
AUGUST 1998
WASTE DISPOSAL INC
SANTA FE SPRINGS, CA
RESPONSIBLE PARTIES AND ANALYTICAL SOURCE
NO. 034613100001
68-00022

70 0 70 140 Feet

10 - 28
8 - 10
6 - 8
4 - 6
2 - 4
0 - 2

N

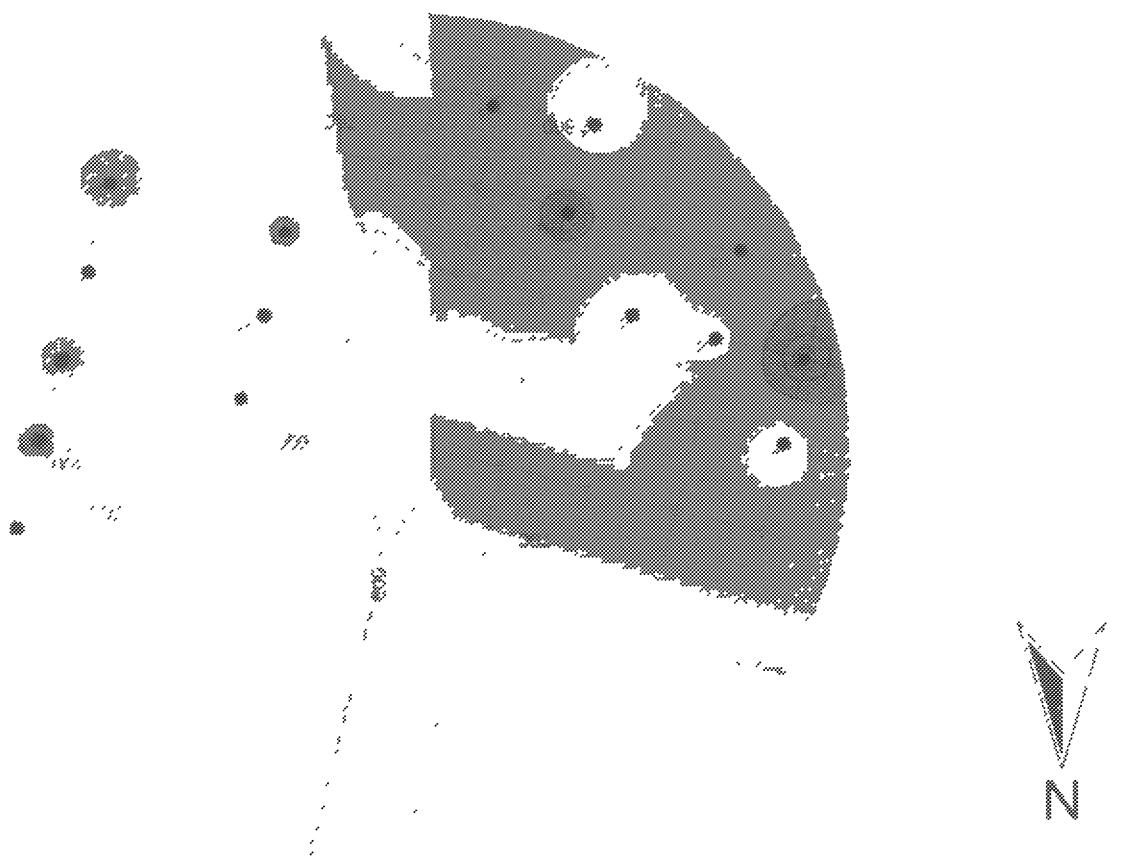


600 - 1000
500 - 900
400 - 800
300 - 700
200 - 600
100 - 500

1000 - 1500
900 - 1400
800 - 1300
700 - 1200
600 - 1100
500 - 1000
400 - 900
300 - 800
200 - 700
100 - 600

1500 - 2000
1400 - 1900
1300 - 1800
1200 - 1700
1100 - 1600
1000 - 1500
900 - 1400
800 - 1300
700 - 1200
600 - 1100
500 - 1000
400 - 900
300 - 800
200 - 700
100 - 600

FIGURE 14



FOR RESERVOIR ORGANIC LIQUID SAMPLES

W.A. # 62412-1103000-300401
98-CH-0023
RESPONSE ENGINEERING AND ANALYTICAL CONTRACT
SANTA FE SPRINGS, CA

JANUARY 1990

WASTE DISPOSAL INC.

AUGUST 1998

U.S. EPA ENVIRONMENTAL RESPONSE TEAM CENTER

RESPONSE ENGINEERING AND ANALYTICAL CONTRACT

FIGURE 15

2-METHYLNAPHTHALENE CONCENTRATION MAP (mg/kg)

1700 - 3000
1600 - 1700
1500 - 1600
1400 - 1500
1300 - 1400
1200 - 1300
1100 - 1200
1000 - 1100

70 0 70 140 Feet

(d)

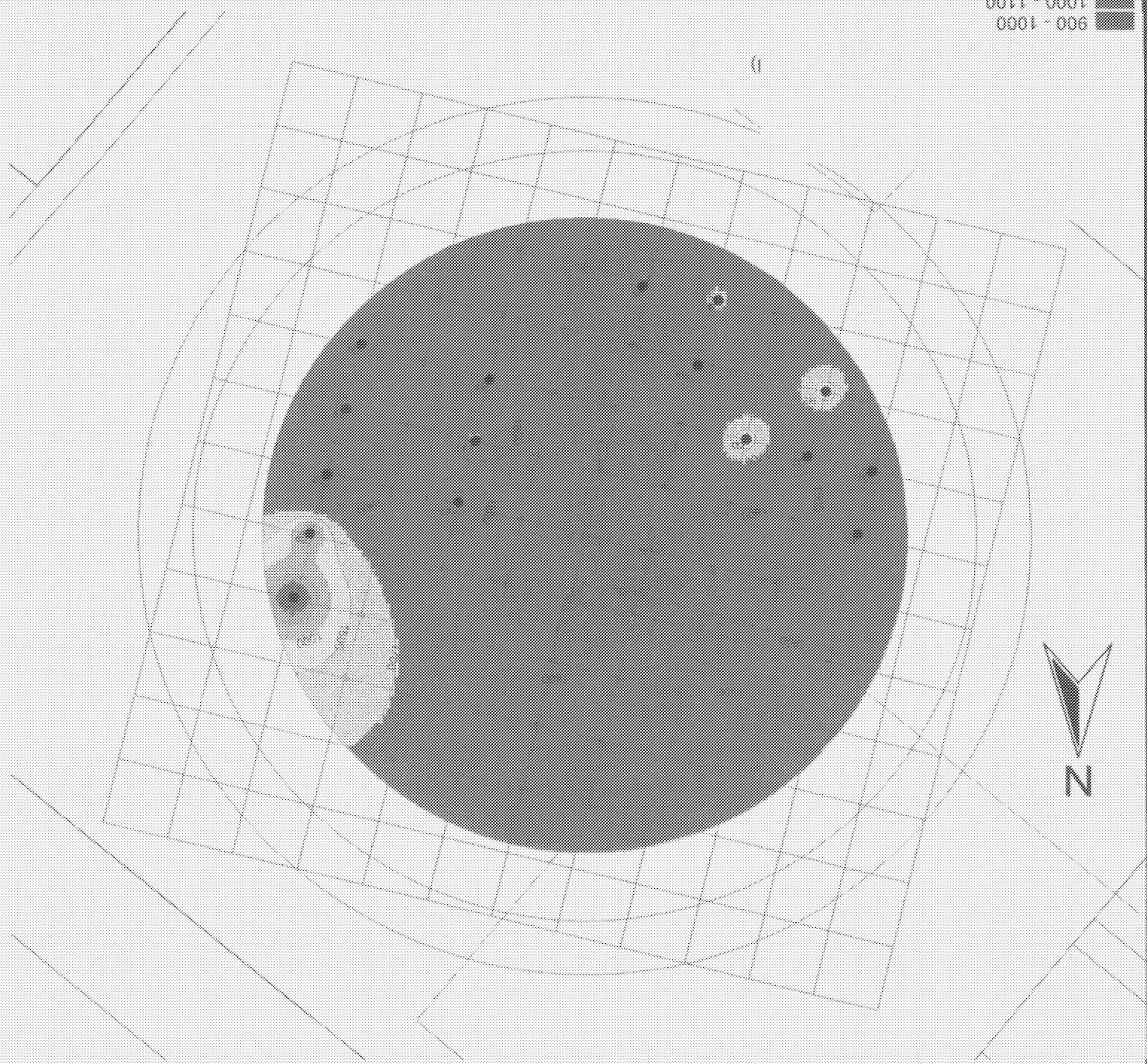


FIGURE 16

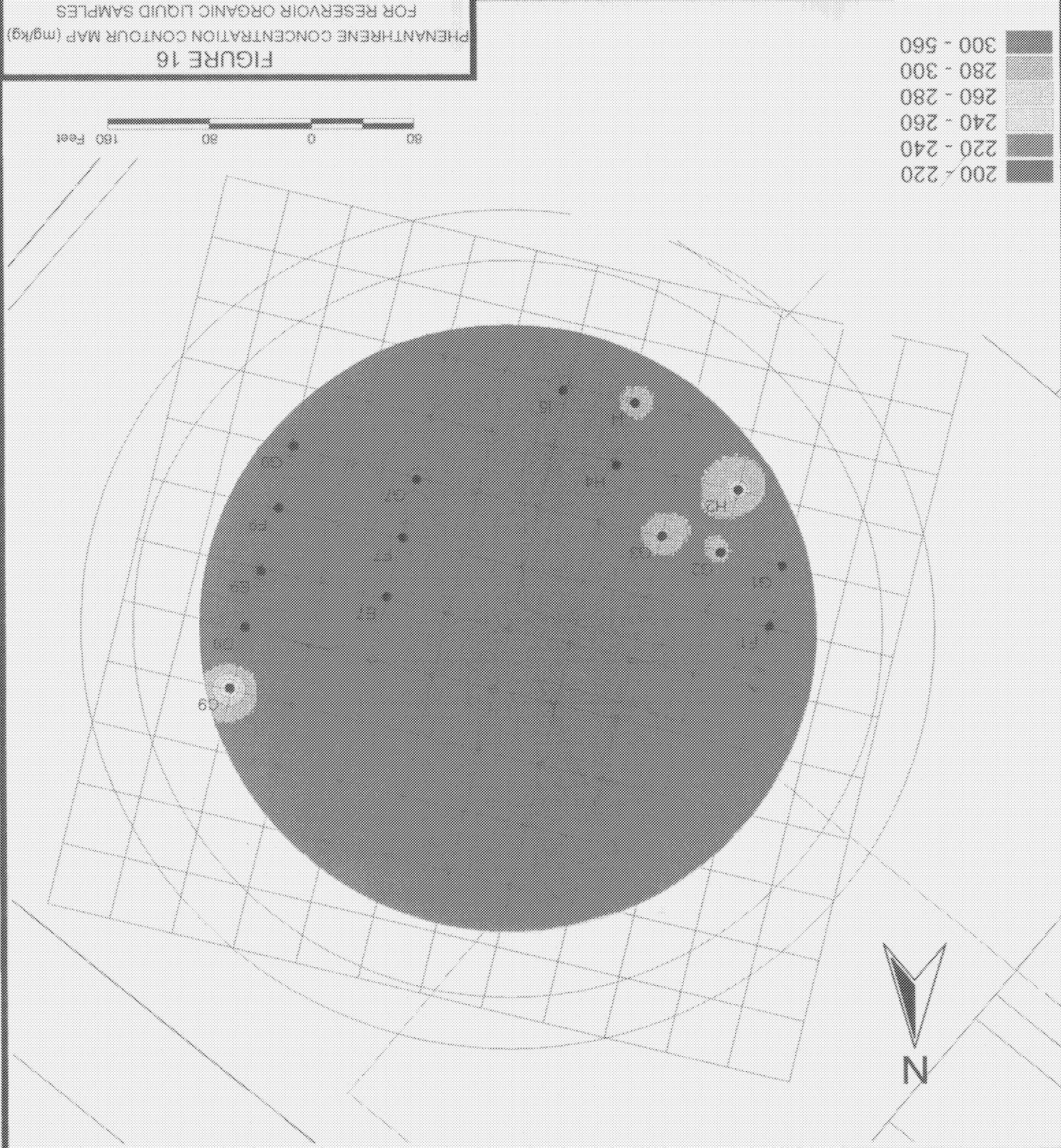
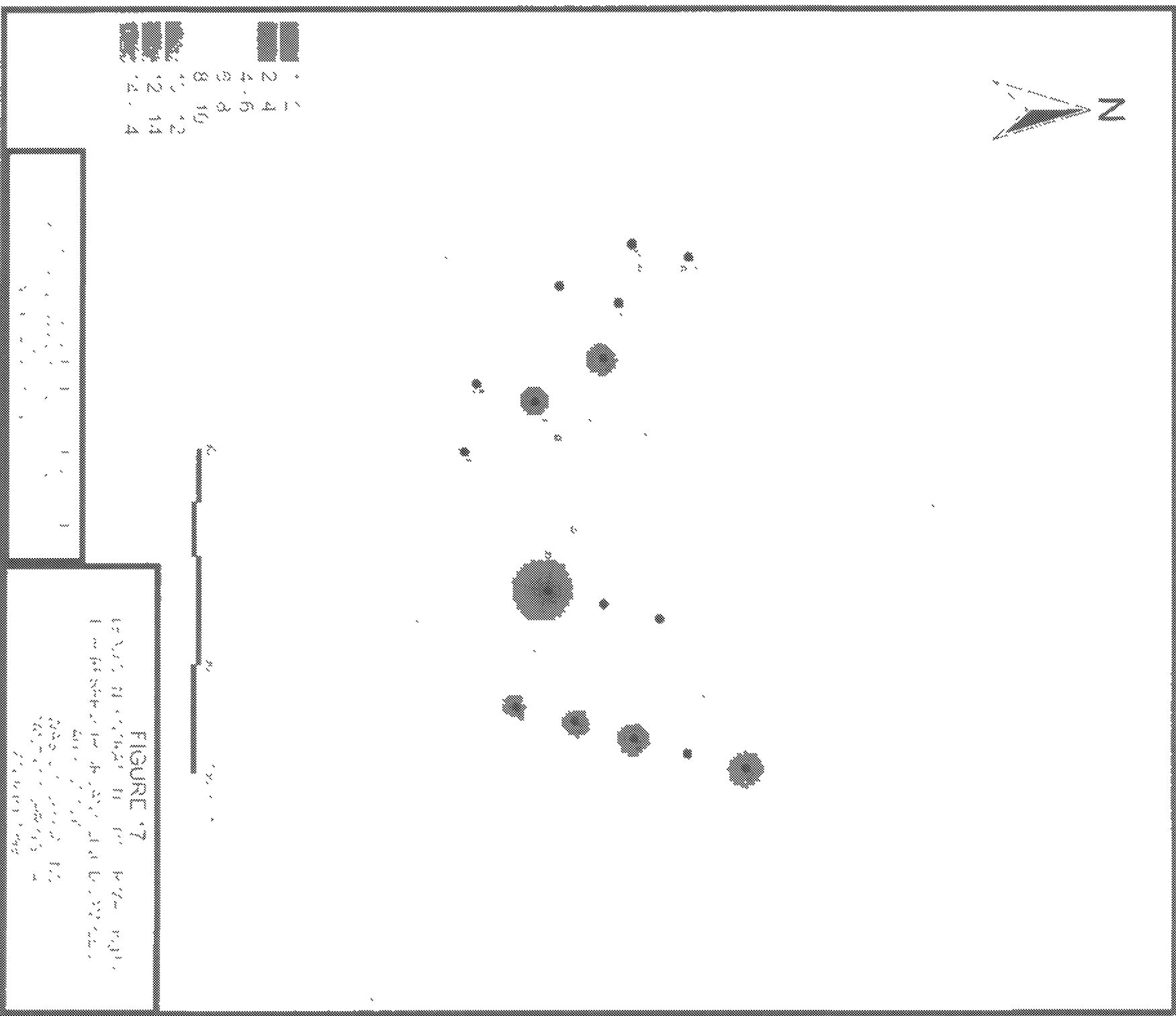


FIGURE 7
A schematic diagram of the flow field around a circular cylinder. The flow is from left to right, indicated by arrows. The wake behind the cylinder is shown as a shaded region. The boundary layer on the cylinder's surface is labeled "Boundary Layer". The wake is labeled "Wake".



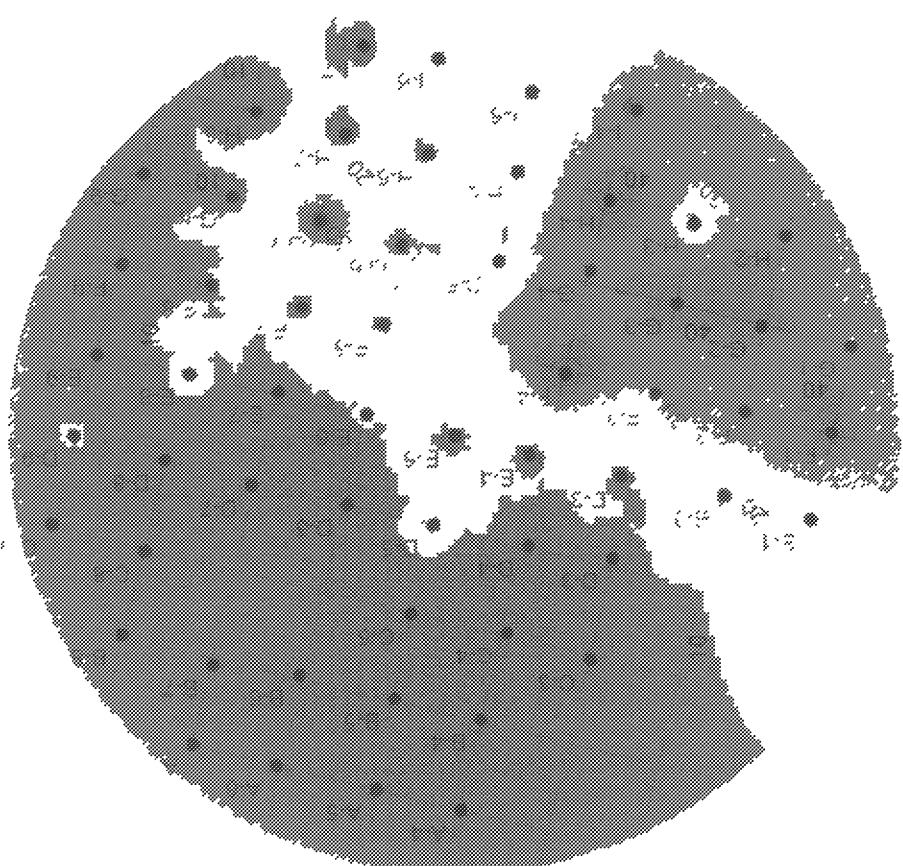
1. *Chlorophytes*
2. *Red algae*
3. *Green algae*
4. *Blue-green algae*
5. *Other algae*

FIGURE 18

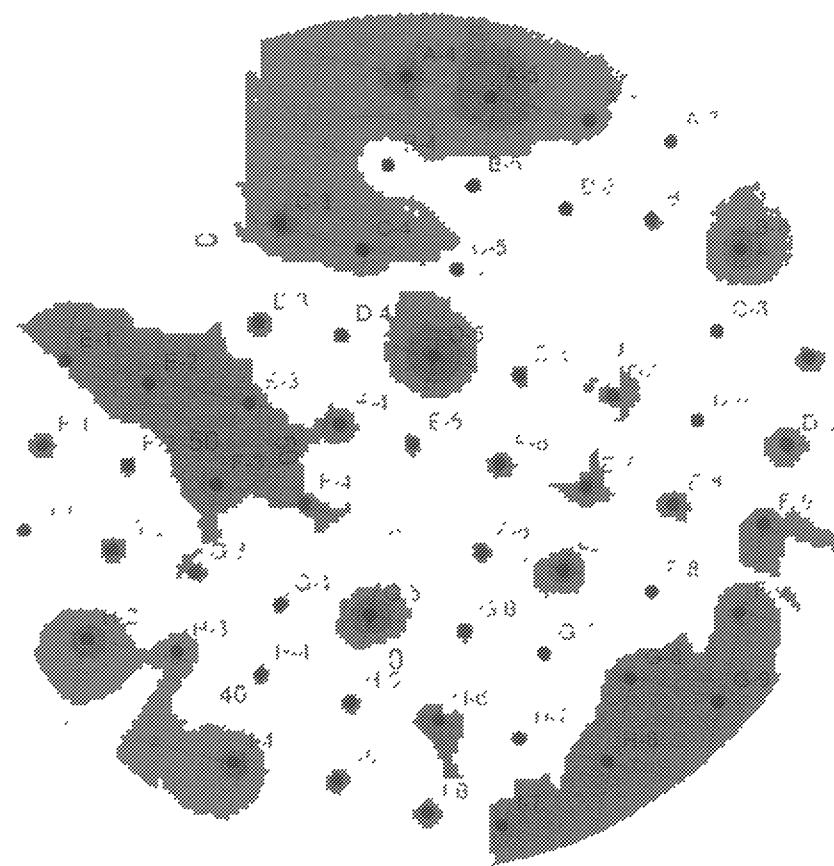


0° - 30° **22%**
30° - 35° **24%**
35° - 50°
50° - 55°
55° - 60°

0° 10° 20° 30° 40° 50° 60° 70° 80° 90°



N
A



■ 0 - 1
1 - 2
2 - 3
▨ 3 - 4
▨ 4 - 11

0 10 20 30 40 50 60 70 80 90 100

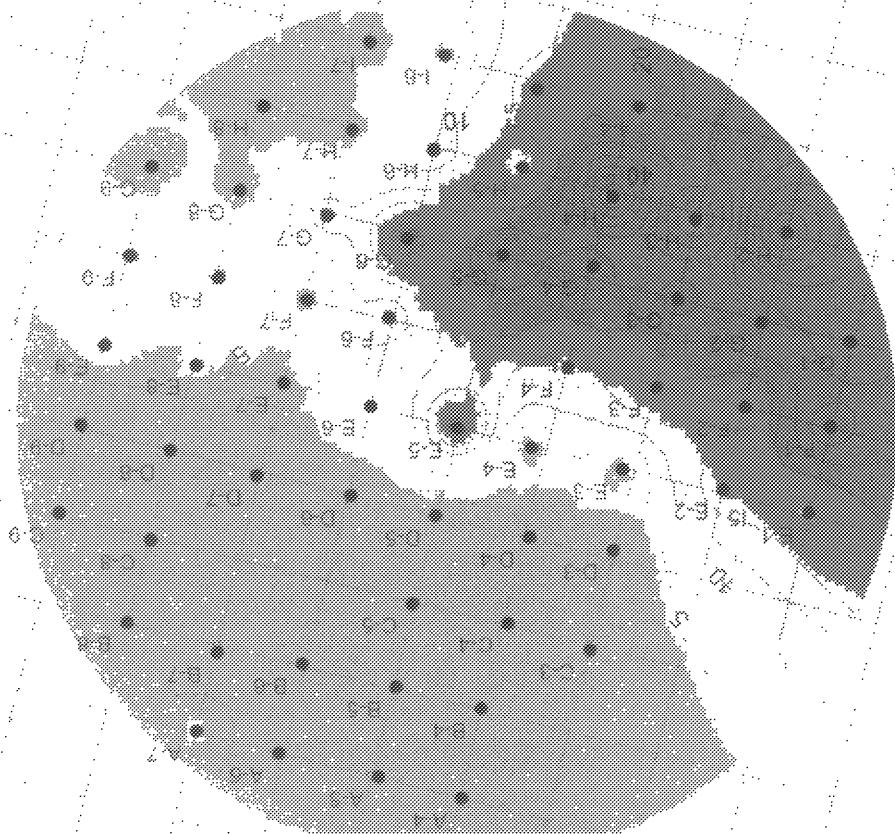
Site	0-1	1-2	2-3	3-4	4-11
A-1	1	1	1	1	1
B-1	1	1	1	1	1
C-1	1	1	1	1	1
D-1	1	1	1	1	1
E-1	1	1	1	1	1
F-1	1	1	1	1	1
G-1	1	1	1	1	1
H-1	1	1	1	1	1
I-1	1	1	1	1	1
J-1	1	1	1	1	1
K-1	1	1	1	1	1
L-1	1	1	1	1	1
M-1	1	1	1	1	1
N-1	1	1	1	1	1
O-1	1	1	1	1	1
P-1	1	1	1	1	1
Q-1	1	1	1	1	1
R-1	1	1	1	1	1
S-1	1	1	1	1	1
T-1	1	1	1	1	1
U-1	1	1	1	1	1
V-1	1	1	1	1	1
W-1	1	1	1	1	1
X-1	1	1	1	1	1
Y-1	1	1	1	1	1
Z-1	1	1	1	1	1
A-2	1	1	1	1	1
B-2	1	1	1	1	1
C-2	1	1	1	1	1
D-2	1	1	1	1	1
E-2	1	1	1	1	1
F-2	1	1	1	1	1
G-2	1	1	1	1	1
H-2	1	1	1	1	1
I-2	1	1	1	1	1
J-2	1	1	1	1	1
K-2	1	1	1	1	1
L-2	1	1	1	1	1
M-2	1	1	1	1	1
N-2	1	1	1	1	1
O-2	1	1	1	1	1
P-2	1	1	1	1	1
Q-2	1	1	1	1	1
R-2	1	1	1	1	1
S-2	1	1	1	1	1
T-2	1	1	1	1	1
U-2	1	1	1	1	1
V-2	1	1	1	1	1
W-2	1	1	1	1	1
X-2	1	1	1	1	1
Y-2	1	1	1	1	1
Z-2	1	1	1	1	1
A-3	1	1	1	1	1
B-3	1	1	1	1	1
C-3	1	1	1	1	1
D-3	1	1	1	1	1
E-3	1	1	1	1	1
F-3	1	1	1	1	1
G-3	1	1	1	1	1
H-3	1	1	1	1	1
I-3	1	1	1	1	1
J-3	1	1	1	1	1
K-3	1	1	1	1	1
L-3	1	1	1	1	1
M-3	1	1	1	1	1
N-3	1	1	1	1	1
O-3	1	1	1	1	1
P-3	1	1	1	1	1
Q-3	1	1	1	1	1
R-3	1	1	1	1	1
S-3	1	1	1	1	1
T-3	1	1	1	1	1
U-3	1	1	1	1	1
V-3	1	1	1	1	1
W-3	1	1	1	1	1
X-3	1	1	1	1	1
Y-3	1	1	1	1	1
Z-3	1	1	1	1	1
A-4	1	1	1	1	1
B-4	1	1	1	1	1
C-4	1	1	1	1	1
D-4	1	1	1	1	1
E-4	1	1	1	1	1
F-4	1	1	1	1	1
G-4	1	1	1	1	1
H-4	1	1	1	1	1
I-4	1	1	1	1	1
J-4	1	1	1	1	1
K-4	1	1	1	1	1
L-4	1	1	1	1	1
M-4	1	1	1	1	1
N-4	1	1	1	1	1
O-4	1	1	1	1	1
P-4	1	1	1	1	1
Q-4	1	1	1	1	1
R-4	1	1	1	1	1
S-4	1	1	1	1	1
T-4	1	1	1	1	1
U-4	1	1	1	1	1
V-4	1	1	1	1	1
W-4	1	1	1	1	1
X-4	1	1	1	1	1
Y-4	1	1	1	1	1
Z-4	1	1	1	1	1
A-5	1	1	1	1	1
B-5	1	1	1	1	1
C-5	1	1	1	1	1
D-5	1	1	1	1	1
E-5	1	1	1	1	1
F-5	1	1	1	1	1
G-5	1	1	1	1	1
H-5	1	1	1	1	1
I-5	1	1	1	1	1
J-5	1	1	1	1	1
K-5	1	1	1	1	1
L-5	1	1	1	1	1
M-5	1	1	1	1	1
N-5	1	1	1	1	1
O-5	1	1	1	1	1
P-5	1	1	1	1	1
Q-5	1	1	1	1	1
R-5	1	1	1	1	1
S-5	1	1	1	1	1
T-5	1	1	1	1	1
U-5	1	1	1	1	1
V-5	1	1	1	1	1
W-5	1	1	1	1	1
X-5	1	1	1	1	1
Y-5	1	1	1	1	1
Z-5	1	1	1	1	1

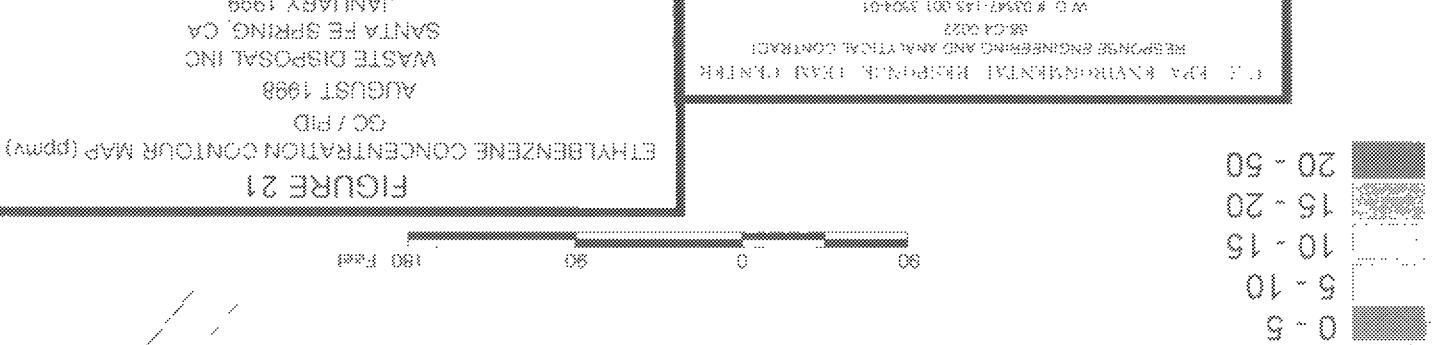
FIGURE 19
MAP OF THE COASTAL AREA, NARROW BAY
AND DRAKE BAY
ANGLER FISHES
MATERIALS

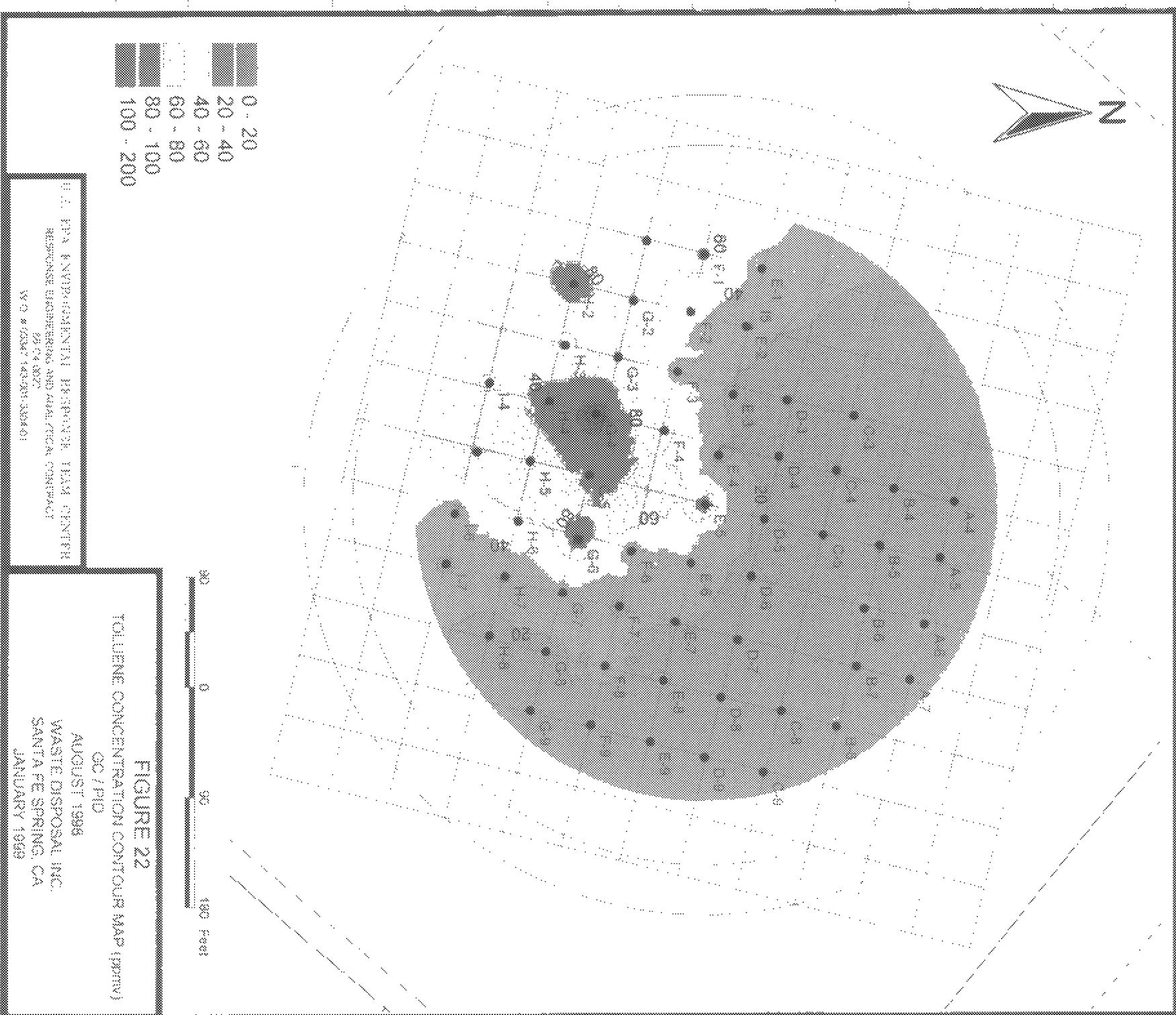
20 - 56
15 - 20
10 - 15
5 - 10
0 - 5

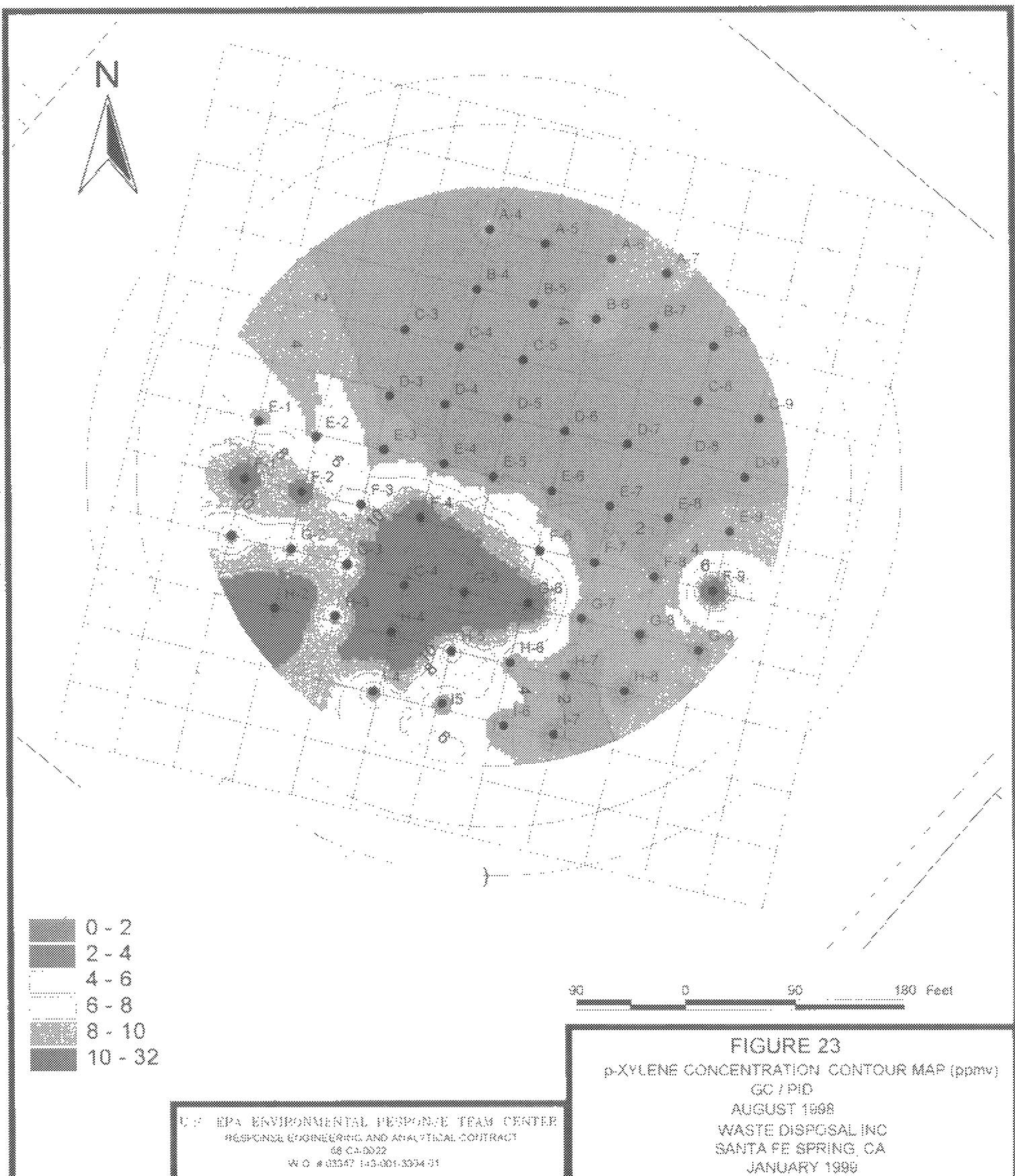
WASTE DISPOSAL INC
SANTA FE SPRINGS, CA
JANUARY 1999
W.D. # 04947-143001 350401
REC'D FROM ENGINEERING AND ANALYTICAL CONTRACTOR
DDCIA 6002

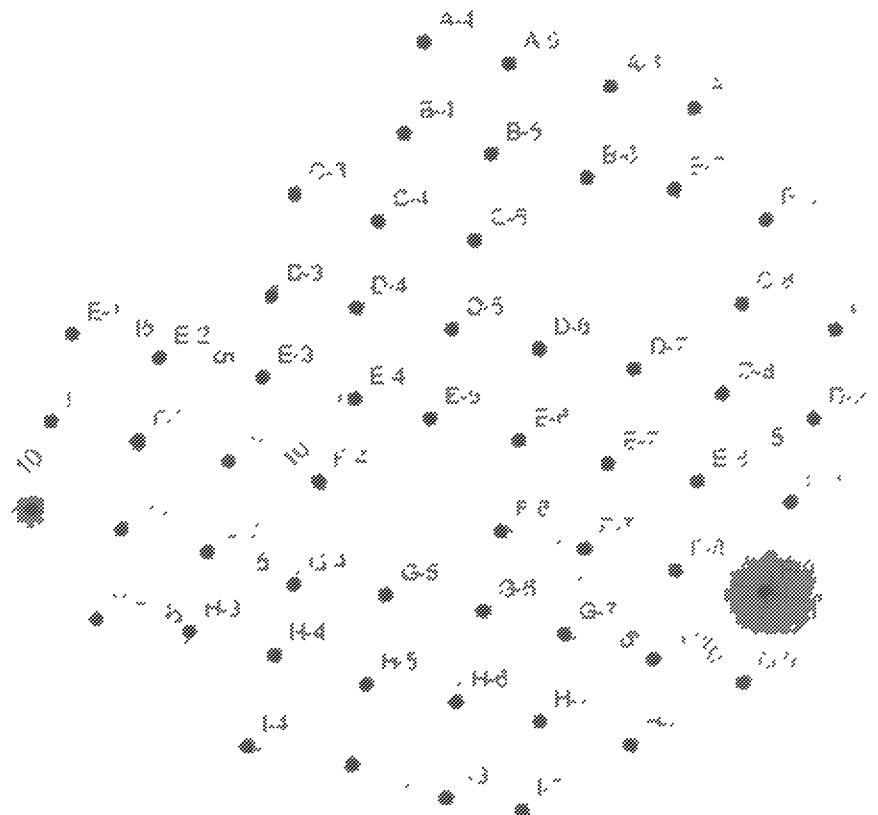
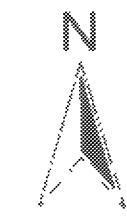
AUGUST 1996
GC / PID
BENZENE CONCENTRATION CONTOUR MAP (PPM)
FIGURE 20











0 - 5
5 - 10
10 - 15
15 - 20
20 - 100

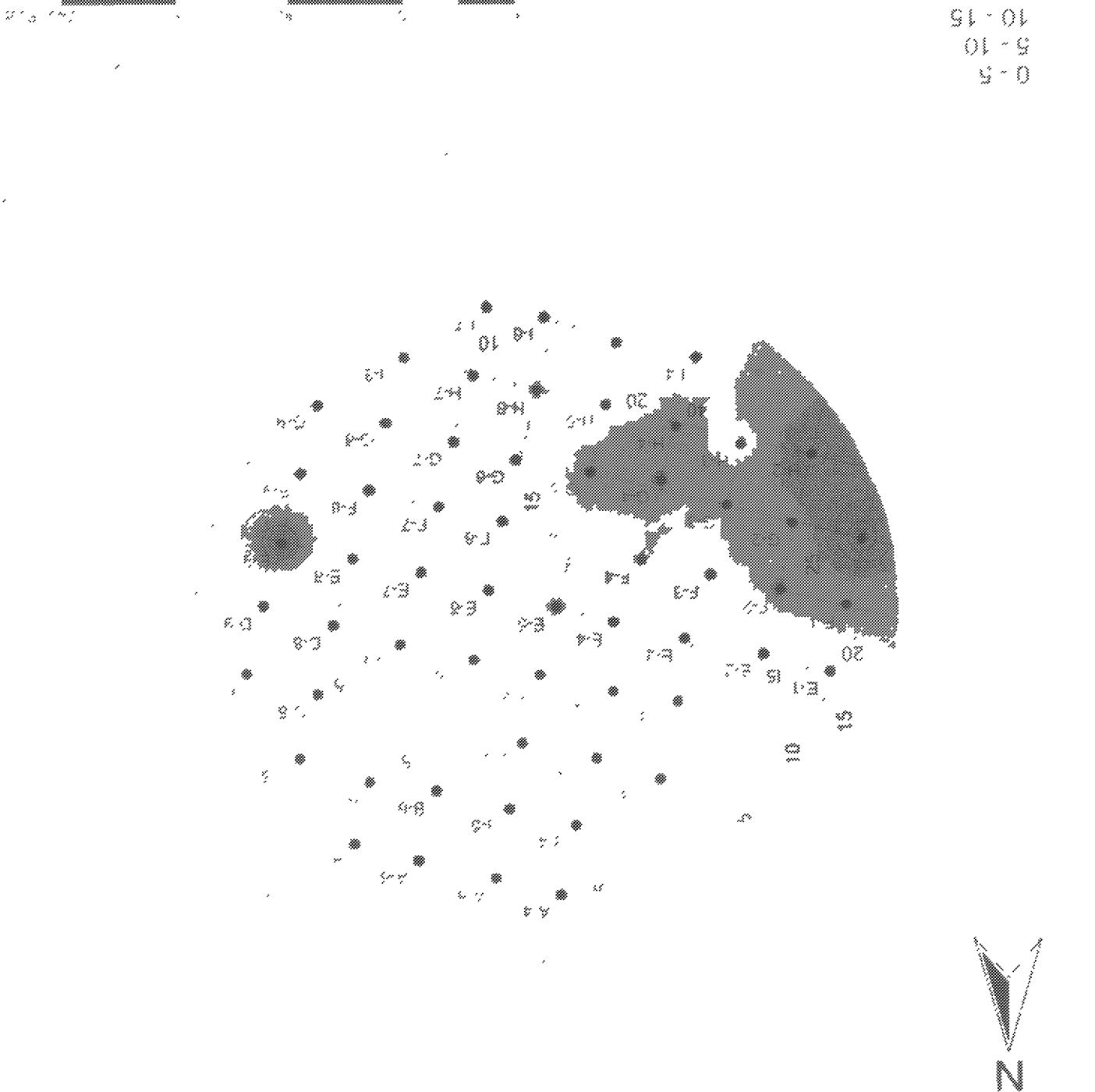
0 50 100 150 200

FIGURE 24

Fig. 24. Distribution of 47000 points
in the area
of the Lake
of the Woods.

1992-07-15 10:00:00,000

FIGURE 25

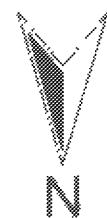
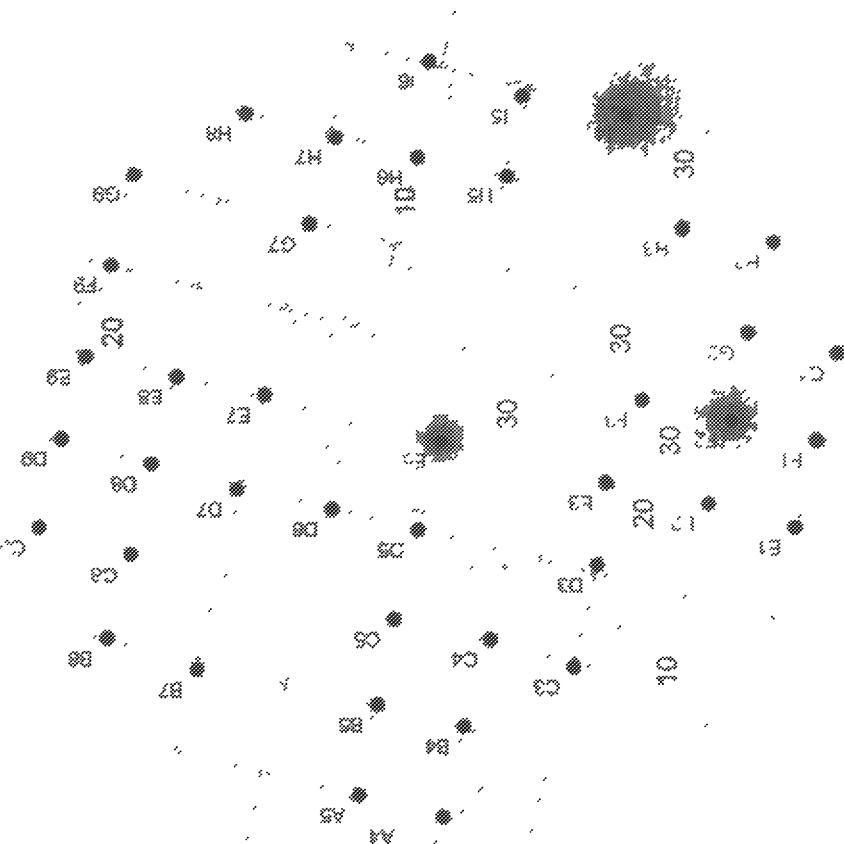


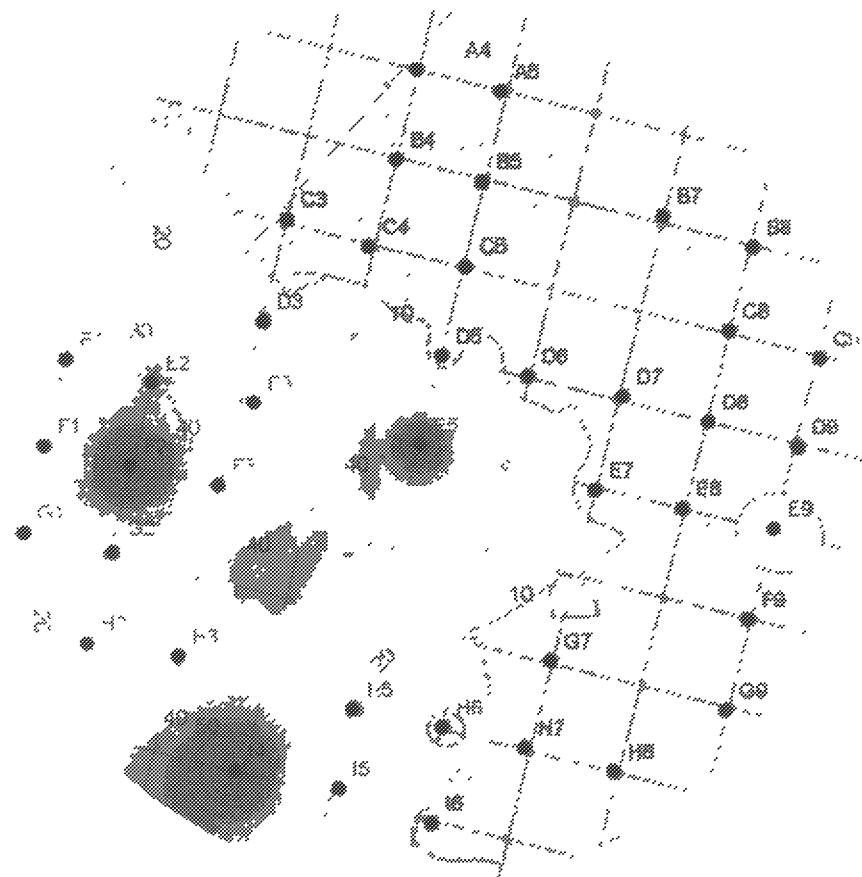
50 - 130
40 - 50
30 - 40
20 - 30
10 - 20
0 - 10



641.0000000000000
541.0000000000000
441.0000000000000
341.0000000000000
241.0000000000000
141.0000000000000
041.0000000000000

FIGURE 26





0 - 10
10 - 20
20 - 30
30 - 40
40 - 50
50 - 200

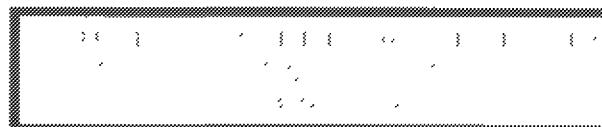


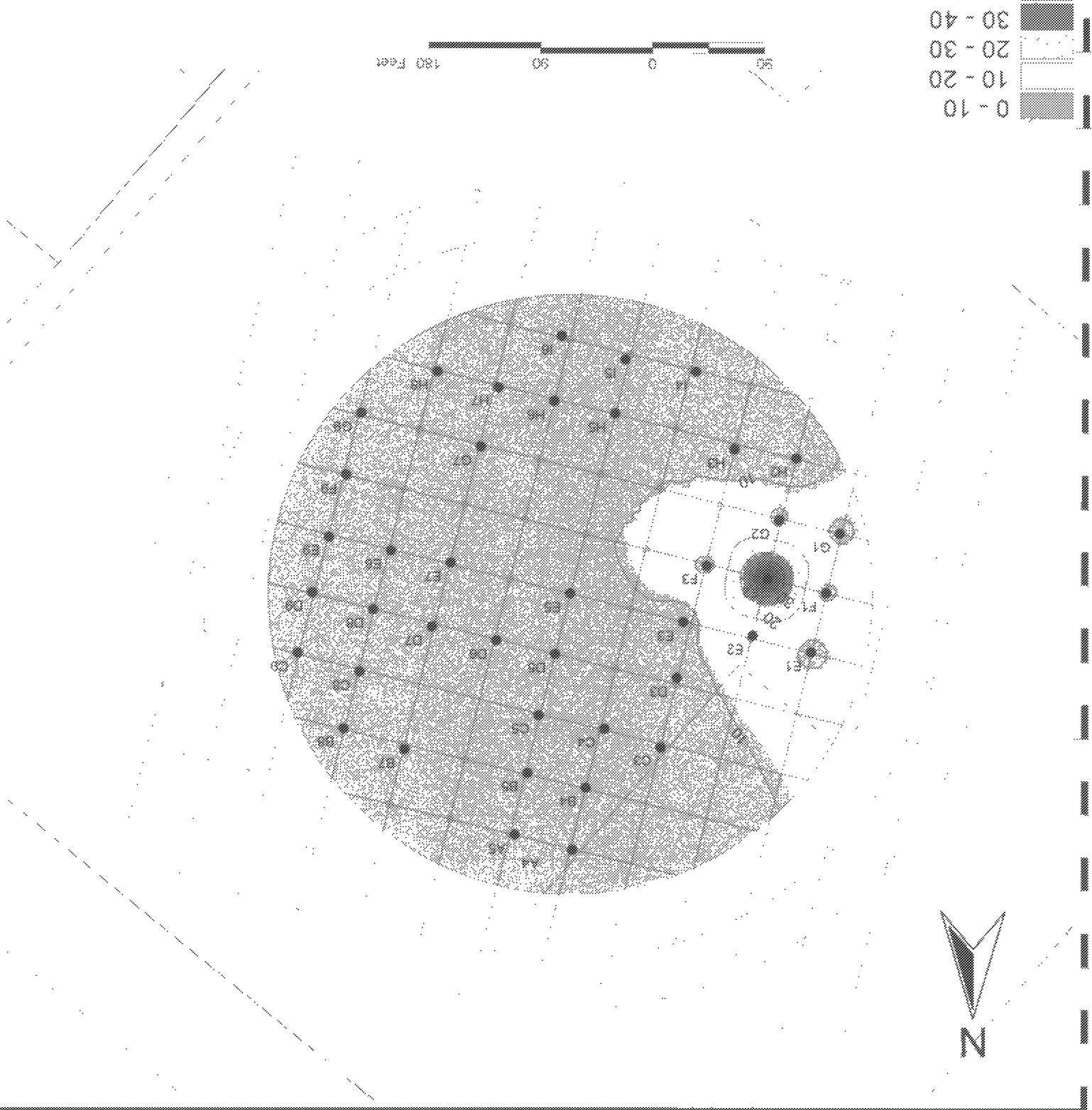
FIGURE 27

MAP OF THE STUDY AREA AND SAMPLING POINTS
SITES
SITES
SAMPLED
SITES
SITES

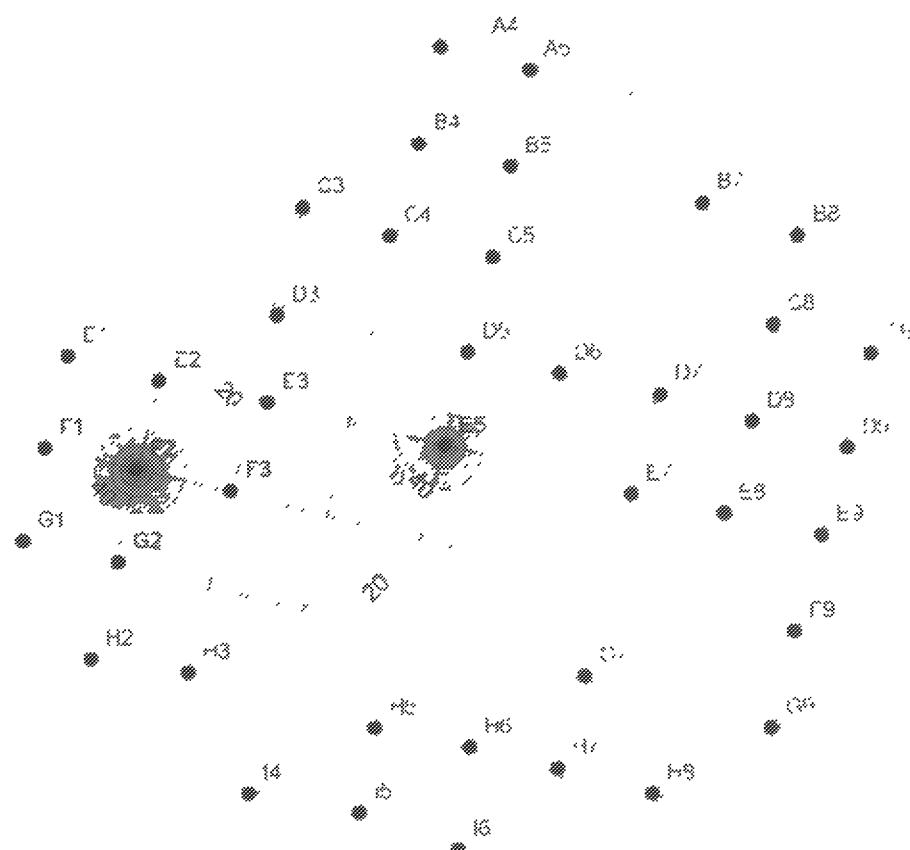
PPG CONCENTRATION ONTO OUR MAP (ppm)

15-21 AUGUST 1998	RESOURCES SUSTAINABILITY AND ANALTICAL CUNTHACI P.O. # 03121-14500N 350401 66-161025
WASTE DISPOSAL INC	SANTA FE SPRINGS, CA
15-21 AUGUST 1998	JANUARY 1999

FIGURE 28
TRATION OUT



N
N

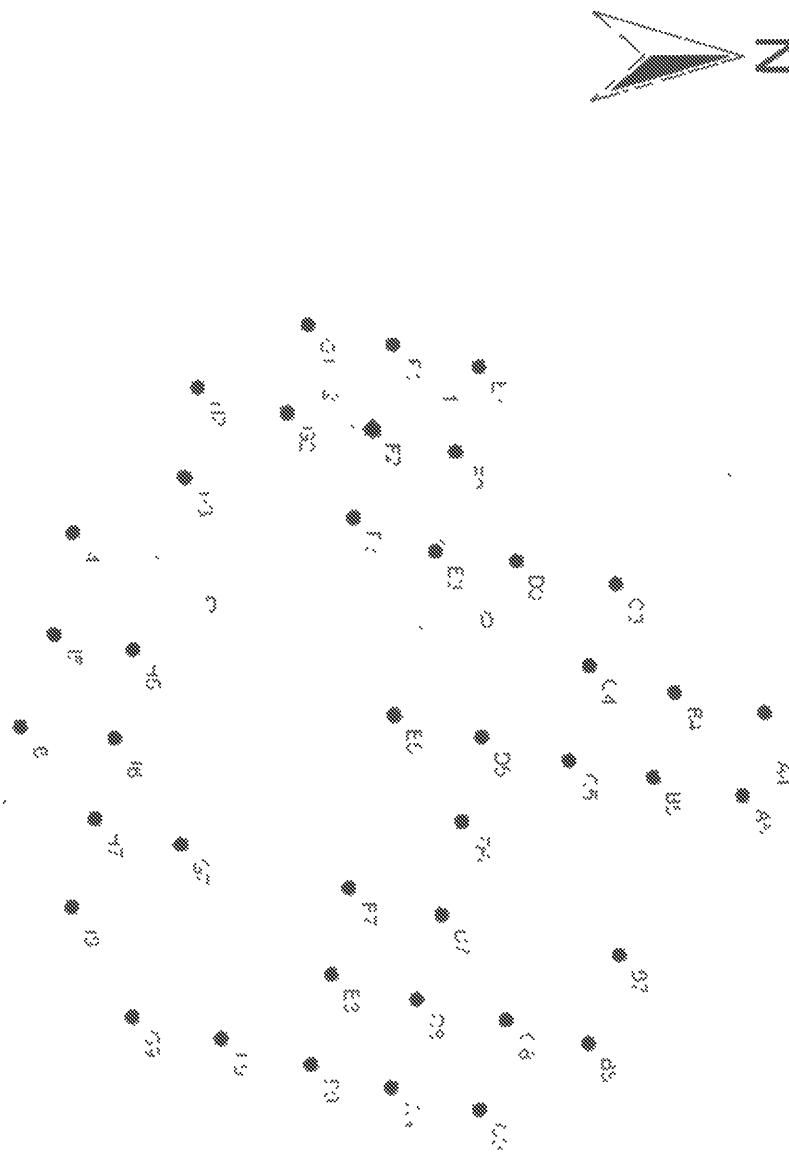
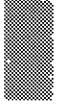


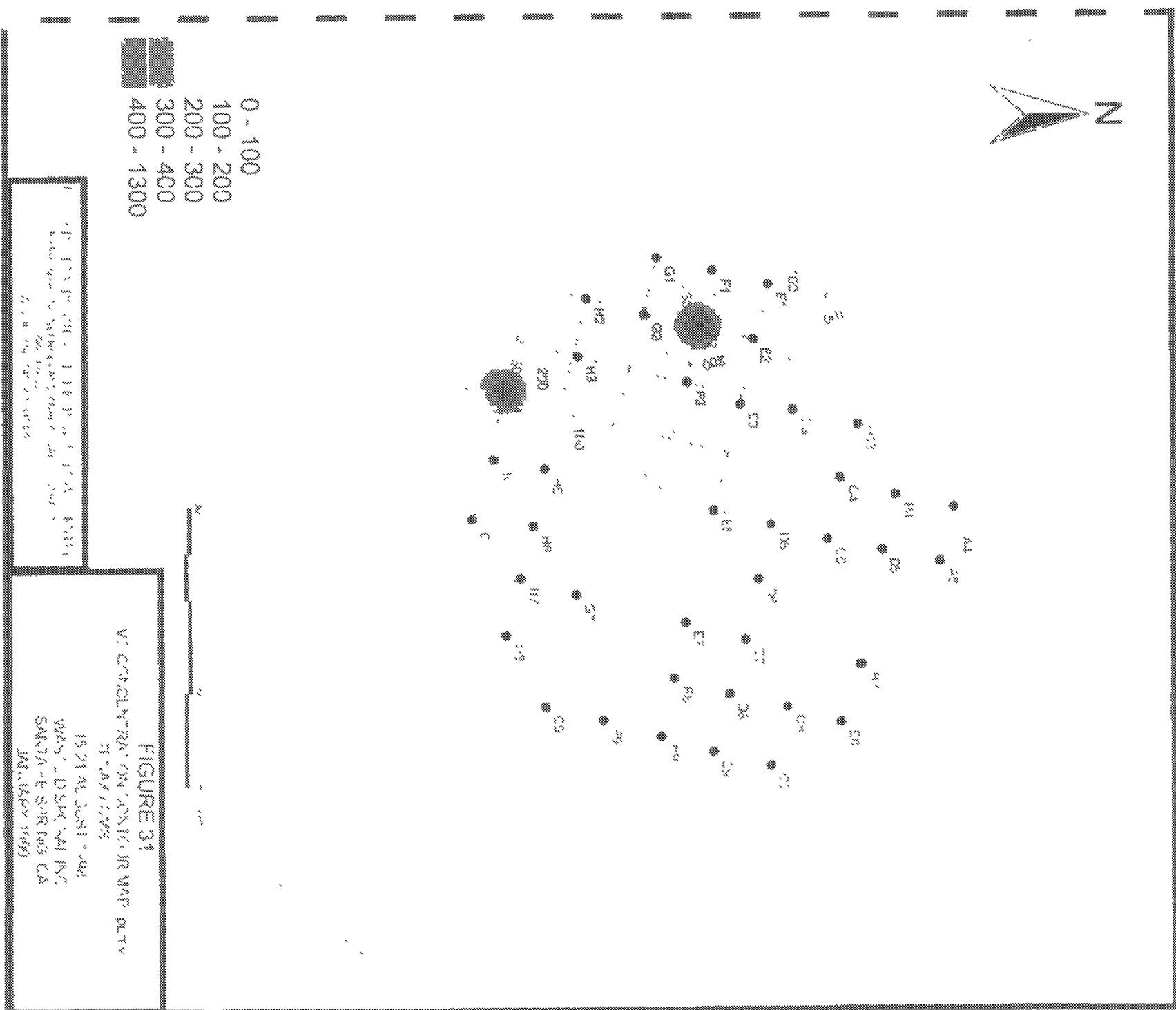
0 - 20
20 - 40
40 - 60
60 - 80
80 - 100
100 - 200

FIGURE 29
TCE CONCENTRATION, CONC%, & MAP REPORT,
TEKNA/ICMS
15.21 AUGUST 1988
WASTE DISPOSAL CO.
SANTA FE SPRINGS CA
JANUARY 1989

FIGURE 30
Map showing locations of the 1970
Baja California Peninsula
Volcanic Eruption
and the 1971
Volcanic Eruption
at Cerro Prieto

0 - 5
5 - 11
11 - 16





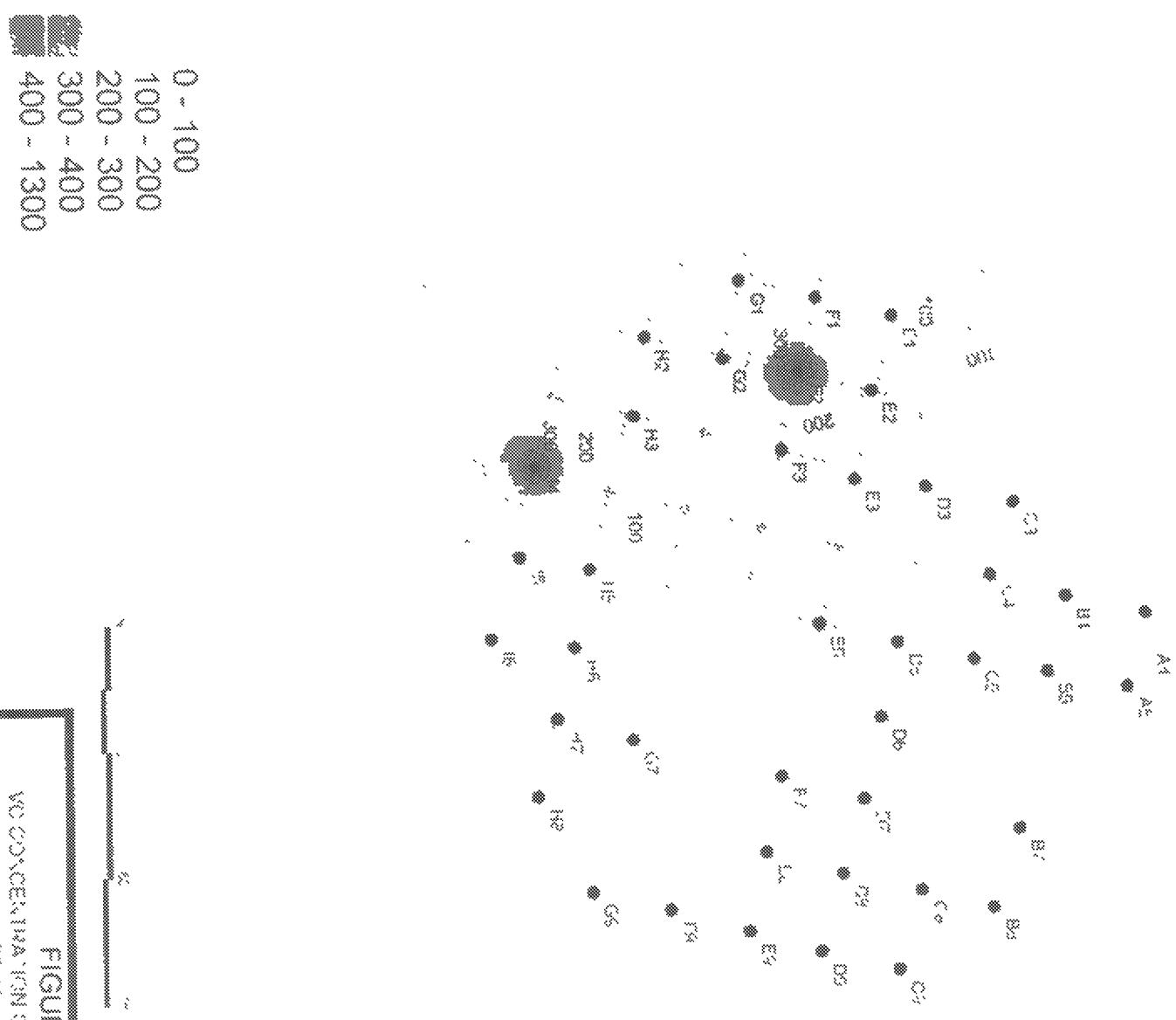
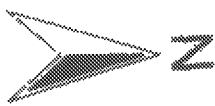


FIGURE 32
VC CONCRETE MASONRY CONSTRUCTION MAP (partial)
IPMA / CMS
"53" APRIL 1948
WASTE DISPOSAL INC
SANTA FE SPRINGS, CA
JANUARY 1968

Appendix A

APPENDIX A
FINAL ANALYTICAL REPORT
WELLS EX-1, VW-9, P-1, P-2, P-3, P-4
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CALIFORNIA
MAY 1999



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

DATE: 6 July 1998
TO: R. Singhvi EPA/ERTC
FROM: V. Kansal Analytical Section Leader *Vinod Kansal*
SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 3-304

Attached please find the following document prepared under this work assignment:

Waste Disposal, Inc.

Central File WA # 3-304
R. Singhvi
G. Newhart
M. Barkley

(w/attachment)
Work Assignment Manager (w/attachment)
Task Leader (w/attachment)
Data Validation and Report Writing
Group Leader (w/o attachment)

3304\DEL\AR\9806\REPORT



Click to WESTON On The Web <http://www.rfweston.com>

ANALYTICAL REPORT

Prepared by
Roy F. Weston, Inc.

Waste Disposal, Inc.
Santa Fe Springs, CA

June 1998

EPA Work Assignment No. 3-304
WESTON Work Order No. 03347-143-001-3304-01
EPA Contract No. 68-C4-0022

Submitted to
R. Singhvi
EPA-ERTC

G. Newhart 6/24/98
G. Newhart
Task Leader

Analysis by:
Columbia

V. Kansal 7/6/98
V. Kansal
Analytical Section Leader

Prepared by:
G. Karustis

E. Gilardi 7/6/98
E. Gilardi
Program Manager

Reviewed by:
M. Barkley

Table of Contents

<u>Topic</u>	<u>Page Number</u>
Introduction	Page 1
Case Narrative	Page 1
Summary of Abbreviations	Page 3
Section I	
Analytical Procedure for VOC	Page 4
Analytical Procedure for BNA	Page 4
Analytical Procedure for Pesticides/PCBs	Page 4
Analytical Procedure for Metals	Page 4
Results of the Analysis for VOC in Oil	Table 1.1 Page 5
Results of the Analysis for BNA in Oil	Table 1.2 Page 9
Results of the Analysis for Pesticides/PCBs in Oil	Table 1.3 Page 13
Results of the Analysis for Metals in Oil	Table 1.4 Page 15
Section II	
QA/QC for VOC	Page 17
Results of the Surrogate Recoveries for VOC in Oil	Table 2.1 Page 18
Results of the MS/MSD Analysis for VOC in Oil	Table 2.2 Page 19
Results of the Analysis of the Laboratory Control Sample for VOC in Oil	Table 2.3 Page 20
QA/QC for BNA	Page 21
Results of the Surrogate Recoveries for BNA in Oil	Table 2.4 Page 22
Results of the MS/MSD Analysis for BNA in Oil	Table 2.5 Page 23
Results of the Analysis of the Laboratory Control Sample for BNA in Oil	Table 2.6 Page 24
Results of the Duplicate Analysis for BNA in Oil	Table 2.7 Page 25
QA/QC for Pesticides/PCBs	Page 27
Results of the Surrogate Recoveries for Pesticides/PCBs in Oil	Table 2.8 Page 28
Results of the Duplicate Analysis for Pesticides/PCBs in Oil	Table 2.9 Page 29
Results of the LCS/LCSD Analysis for Pesticides/PCBs in Oil	Table 2.10 Page 30
QA/QC for Metals	Page 31
Results of the Matrix Analysis for Metals in Oil	Table 2.11 Page 32
Results of the Duplicate Analysis for Metals in Oil	Table 2.12 Page 33
Results of the Analysis of the Laboratory Control Sample for Metals in Oil	Table 2.13 Page 34
Section III	
Communications	Page 35
Chains of Custody	Page 37
Appendix A Data for VOC	Page H 243 001
Appendix B Data for BNA	Page H 241 001
Appendix C Data for Pesticides/PCBs	Page H 244 001
Appendix D Data for Metals	Page H 242 001

Appendices will be furnished on request.

3304\DEL\AR\9806\REPORT

Introduction

REAC in response to WA #2-304 and WA 3-304, provided analytical support for environmental samples collected from Waste Disposal, Inc., located in Santa Fe Springs, CA as described in the following table. The support also included QA/QC, data review, and preparation of an analytical report containing a summary of the analytical methods, the results, and the QA/QC results.

The samples were treated with procedures consistent with those specified in SOP #1008.

COC #	Number of Samples	Sampling Date	Date Received	Matrix	Analysis	Laboratory
04219	2	5/6/98	5/11/98	Oil	VOC, BNA, Pest/PCB, Metals	Columbia
04219	4	5/7/98	5/11/98	Oil	VOC, BNA, Pest/PCB, Metals	Columbia

Case Narrative

Because this project spanned two option periods, the Work Assignment Number on several documents refers to the previous option period.

VOC Package H 243

In the initial calibration of 5/20/98 the acceptable QC limits were exceeded by methyl tert-butyl ether (60%). The non-detected values for methyl tert-butyl ether in the method blank and samples A,B 12525, A,B 12386, A,B 12388, A,B 12505, A,B 12387 and A,B 12385 should be regarded as estimated.

In the continuing calibration check standard of 5/20/98 the acceptable QC limits were exceeded by methyl tert-butyl ether (43%). The data are not affected because this analyte was not detected in the associated samples.

The percent recoveries of one or more surrogates exceeded the acceptable QC limits for samples A,B 12525, A,B 12386, A,B 12388, A,B 12505, A,B 12387 and A,B 12385. The VOC data for these samples should be regarded as estimated.

Note: Surrogate percent limits were not provided by the subcontract laboratory. The limits found in USEPA Method 8260 A were used as a guide.

BNA Package H 241

Surrogate limits were not provided by the subcontract laboratory; the limits found in USEPA Method 8270 B were used as a guide.

In the initial calibration of 5/12/98 the acceptable QC limits were exceeded by 2,4-dinitrophenol (23%) and 2-methyl-4,6-dinitrophenol (30%). The data are not affected as these analytes were not detected in the associated samples.

In the continuing calibration check standard of 5/19/98 the acceptable QC limits were exceeded by N-nitrosodimethyl amine (42%). The data are not affected as this analyte was not detected in the associated samples.

The percent recoveries of the surrogates exceeded the acceptable QC limits for samples A,B 12525 (1:10), A,B 12525 Dup (1:10), A,B 12386 (1:10), A,B 12388 (1:10), A,B 12505 (1:10), A,B 12387 (1:10) and A,B 12385 (1:10). The data are not affected as the surrogates were within the acceptable QC limits in the undiluted samples.

Pesticide/PCB Package H 244

In the initial calibration of 5/06/98 the acceptable QC limits were exceeded by α -BHC (27%) on signal 1 and 24% on signal 2, lindane (23%) on signal 1, δ -BHC (24%) on signal 2. The data are not affected as this analyte was not detected in the associated samples.

The REAC surrogate percent recovery limits of 60-150% were adopted because USEPA Method 8080 A does not specify surrogate recovery limits.

The concentration of Aroclor 1248 in sample 12525 was recalculated as 140 mg/kg because the 5th peak was influenced by matrix interference and could not be used.

Metals Package H 242

The data were examined and were found to be acceptable.

Summary of Abbreviations

AA	Atomic Absorption				
B	The analyte was found in the blank				
BFB	Bromofluorobenzene				
C	Centigrade				
D	(Surrogate Table) this value is from a diluted sample and was not calculated (Result Table) this result was obtained from a diluted sample				
Dioxin	denotes Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans and/or PCDD and PCDF				
CLP	Contract Laboratory Protocol				
COC	Chain of Custody				
CONC	Concentration				
CRDL	Contract Required Detection Limit				
CRQL	Contract Required Quantitation Limit				
DFTPP	Decafluorotriphenylphosphine				
DL	Detection Limit				
E	The value is greater than the highest linear standard and is estimated				
EMPC	Estimated maximum possible concentration				
ICAP	Inductively Coupled Argon Plasma				
ISTD	Internal Standard				
J	The value is below the method detection limit and is estimated				
LCS	Laboratory Control Sample				
LCSD	Laboratory Control Sample Duplicate				
MDL	Method Detection Limit				
MI	Matrix Interference				
MS	Matrix Spike				
MSD	Matrix Spike Duplicate				
MW	Molecular Weight				
NA	either Not Applicable or Not Available				
NC	Not Calculated				
NR	Not Requested				
NS	Not Spiked				
% D	Percent Difference				
% REC	Percent Recovery				
PQL	Practical Quantitation Limit				
PPBV	Parts per billion by volume				
PPBA	Parts per billion in Air				
QL	Quantitation Limit				
RPD	Relative Percent Difference				
RSD	Relative Standard Deviation				
SIM	Selected Ion Mode				
TCLP	Toxic Characteristics Leaching Procedure				
U	Denotes not detected				
W	Weathered sample; the results should be regarded as estimated				
m³	cubic meter	kg	kilogram	µg	microgram
L	liter	g	gram	pg	picogram
mL	milliliter	mg	milligram		
µL	microliter				
*	denotes a value that exceeds the acceptable QC limit				
	Abbreviations that are specific to a particular table are explained in footnotes on that table				

Revision 10/16/97

Analytical Procedure for VOC

The subcontract laboratory extracted the samples using USEPA Method 5030 A and analyzed them according to USEPA Method 8260 A. The results of the analysis are listed in Table 1.1.

Analytical Procedure for BNA

The subcontract laboratory extracted the samples using USEPA Method 3580 and analyzed them according to USEPA Method 8270 B. The results of the analysis are listed in Table 1.2.

Analytical Procedure for Pesticides/PCBs

The subcontract laboratory extracted the samples using USEPA Method 3580 and analyzed them according to USEPA Method 8080 A. The results of the analysis are listed in Table 1.3.

Analytical Procedure for Metals

The subcontract laboratory extracted the samples using USEPA Method 7471 A for mercury and USEPA Method 3051 M for the remainder of the metals and analyzed them according to USEPA Method 200.8, 7060 A, 7140, 7380, 7450, 7471 A, 7610, 7740, 7770 and 7841. The results of the analysis are listed in Table 1.4.

Table 1.1 Results of the Analysis for VOC in OS
 WA # 3-304 Waste Disposal
 (Results are reported on an "as received" basis)

Sample # Location Dil. Factor	Method Blank		A,B 12385 WDI EX1 500		A,B 12525 WDI P3 500		A,B 12386 WDI P1 500	
	1							
Compound	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
Dichlorodifluoromethane (CFC 12)	ND	0.05	ND	25	ND	25	ND	25
Chloromethane	ND	0.05	ND	25	33	25	ND	25
Vinyl Chloride	ND	0.05	ND	25	ND	25	ND	25
Bromomethane	ND	0.05	ND	25	ND	25	ND	25
Chloroethane	ND	0.05	ND	25	ND	25	ND	25
Trichlorofluoromethane (CFC 11)	ND	0.05	ND	25	ND	25	ND	25
Acetone	ND	2	ND	1000	ND	1000	ND	1000
1,1-Dichloroethene (1,1-DCE)	ND	0.05	ND	25	ND	25	ND	25
Carbon Disulfide	ND	0.05	ND	25	ND	25	ND	25
Methylene Chloride	ND	0.1	ND	50	ND	50	ND	50
trans-1,2-Dichloroethene	ND	0.05	ND	25	ND	25	ND	25
1,1-Dichloroethane (1,1-DCA)	ND	0.05	ND	25	ND	25	ND	25
2-Butanone (MEK)	ND	2	ND	1000	ND	1000	ND	1000
2,2-Dichloropropene	ND	0.05	ND	25	ND	25	ND	25
cis-1,2-Dichloroethene	ND	0.05	27	25	ND	25	780	25
Chloroform	ND	0.05	ND	25	ND	25	ND	25
Bromoform	ND	0.05	ND	25	ND	25	ND	25
1,1,1-Trichloroethane (TCA)	ND	0.05	ND	25	ND	25	ND	25
1,1-Dichloropropene	ND	0.05	ND	25	ND	25	ND	25
Carbon Tetrachloride	ND	0.05	ND	25	ND	25	ND	25
1,2-Dichloroethane (EDC)	ND	0.05	ND	25	ND	25	ND	25
Benzene	ND	0.05	200	25	ND	25	310	25
Trichloroethene (TCE)	ND	0.05	86	25	ND	25	140	25
1,2-Dichloropropane	ND	0.05	ND	25	ND	25	ND	25
Bromodichloromethane	ND	0.05	ND	25	ND	25	ND	25
Dibromomethane	ND	0.05	ND	25	ND	25	ND	25
2-Hexanone	ND	2	ND	1000	ND	1000	ND	1000
cis-1,3-Dichloropropene	ND	0.05	ND	25	ND	25	ND	25
Toluene	ND	0.05	1800	25	44	25	1700	25
trans-1,3-Dichloropropene	ND	0.05	ND	25	ND	25	ND	25
1,1,2-Trichloroethane	ND	0.05	ND	25	ND	25	ND	25
4-Methyl-2-pentanone (MIBK)	ND	2	ND	1000	ND	1000	ND	1000

Table 1.1 (Cont) Results of the Analysis for VOC In Oil
WA # 3-304 Waste Disposal
(Results are reported on an "as received" basis)

Sample # Location Dil. Factor	Method Blank		A,B 12385 WDI EX1 500		A,B 12525 WDI P3 500		A,B 12386 WDI P1 500	
	1							
Compound	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
1,3-Dichloropropane	ND	0.05	ND	25	ND	25	ND	25
Tetrachloroethane (PCE)	ND	0.05	120	25	40	25	44	25
Dibromochloromethane	ND	0.05	ND	25	ND	25	ND	25
1,2-Dibromoethane (EDB)	ND	0.2	ND	100	ND	100	ND	100
Chlorobenzene	ND	0.05	ND	25	ND	25	ND	25
1,1,1,2-Tetrachloroethane	ND	0.05	ND	25	ND	25	ND	25
Ethylbenzene	ND	0.05	440	25	120	25	550	25
Xylenes, Total	ND	0.05	3800	25	630	25	3800	25
Styrene	ND	0.05	ND	25	ND	25	81	25
Bromoform	ND	0.05	ND	25	ND	25	ND	25
Isopropylbenzene (Cumene)	ND	0.2	140	100	80	100	160	100
1,1,2,2-Tetrachloroethane	ND	0.05	ND	25	ND	25	ND	25
1,2,3-Trichloropropene	ND	0.05	ND	25	ND	25	ND	25
Bromobenzene	ND	0.05	ND	25	ND	25	ND	25
n-Propylbenzene	ND	0.2	260	100	150	100	280	100
2-Chlorotoluene	ND	0.2	ND	100	ND	100	ND	100
4-Chlorotoluene	ND	0.2	ND	100	ND	100	ND	100
1,3,5-Trimethylbenzene	ND	0.2	640	100	160	100	570	100
tert-Butylbenzene	ND	0.2	ND	100	ND	100	ND	100
1,2,4-Trimethylbenzene	ND	0.2	1800	100	920	100	1800	100
sec-Butylbenzene	ND	0.2	150	100	110	100	150	100
1,3-Dichlorobenzene	ND	0.05	ND	25	37	25	ND	25
4-Isopropyltoluene	ND	0.2	230	100	160	100	210	100
1,4-Dichlorobenzene	ND	0.05	58	25	230	25	78	25
n-Butylbenzene	ND	0.2	170	100	150	100	190	100
1,2-Dichlorobenzene	ND	0.05	150	25	240	25	180	25
1,2-Dibromo-3-chloropropane (DBCP)	ND	0.2	ND	100	ND	100	ND	100
1,2,4-Trichlorobenzene	ND	0.2	ND	100	ND	100	ND	100
1,2,3-Trichlorobenzene	ND	0.2	ND	100	ND	100	ND	100
Naphthalene	ND	0.2	430	100	370	100	500	100
Hexachlorobutadiene	ND	0.2	ND	100	ND	100	ND	100
Methyl tert-Butyl Ether	ND	0.2	ND	100	ND	100	ND	100

Table 1.1 (Cont.) Results of the Analysis for VOCs in oil
WA # 3-304 Waste Disposal

(Results are reported on an "as received" basis)

Sample #	Location	DL Factor	A,B 12286 WDI P2 500	A,B 12295 WDI P4 500	A,B 12287 WDI W9 500
Compound			Cone mg/kg	MDL mg/kg	Cone mg/kg
Dichlorodifluoromethane (CFC 12)	ND	25	ND	25	ND
Chloromethane	ND	25	ND	25	ND
Vinyl Chloride	45	20	4	ND	ND
Bromomethane	ND	25	ND	25	ND
Chloroethane	ND	25	ND	25	ND
Trichlorofluoromethane (CFC 11)	ND	1000	ND	25	ND
Acetone	ND	25	ND	25	ND
1,1-Dichloroethene (1,1-DCE)	ND	25	ND	25	ND
Carbon Dioxide	ND	50	ND	50	ND
Methylene Chloride	ND	25	ND	25	ND
trans-1,2-Dichloroethene	ND	25	ND	25	ND
1,1-Dichloroethane (1,1-DCA)	ND	1000	ND	25	ND
2-Butanone (MEK)	ND	25	ND	25	ND
2,2-Dichloropropane	470	25	8	ND	ND
cis-1,2-Dichloroethene	ND	25	ND	25	ND
Chloroform	ND	25	ND	25	ND
Bromochloromethane	ND	25	ND	25	ND
1,1,1-Trichloroethane (TCA)	ND	25	ND	25	ND
1,1-Dichloropropane	ND	25	ND	25	ND
Carbon Tetrachloride	ND	25	ND	25	ND
1,2-Dichloroethane (EDC)	ND	100	ND	25	ND
Benzene	170	25	35	ND	ND
Trichloroethene (TCE)	280	ND	25	ND	ND
1,2-Dichloropropane	ND	25	ND	25	ND
Bromodichloromethane	ND	25	ND	25	ND
Dibromomethane	ND	25	ND	25	ND
2-Hexanone	ND	1000	ND	25	ND
cis-1,3-Dichloropropene	1000	ND	25	ND	ND
Toluene	ND	25	ND	25	ND
trans-1,3-Dichloropropene	ND	25	ND	25	ND
1,1,2-Trichloroethane	ND	25	ND	25	ND
4-Methyl-2-pentanone (MIBK)	ND	1000	ND	1000	ND

00007

Table 1.1 (Cont) Results of the Analysis for VOC in oil
WA # 3-304 Waste Disposed
(Results are reported on an "as received" basis)

Sample #	Location	Dil. Factor	A,B 12388 WDI P2 500	A,B 12505 WDI P4 500	A,B 12387 WDI VM9 500					
Compound			Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
1,3-Dichloropropane			ND	25	ND	25	ND	25	ND	25
Tetrachloroethene (PCE)			110	25	ND	25	ND	25	ND	25
Dibromochloromethane			ND	100	ND	100	ND	100	ND	100
1,2-Dibromoethane (EDB)			ND	25	ND	25	ND	25	ND	25
Chlorobenzene			ND	25	ND	25	ND	25	ND	25
1,1,1,2-Tetrachloroethane			ND	25	ND	25	ND	25	ND	25
Ethylbenzene			400	25	510	25	280	25	250	25
Xylenes, Total			3000	25	3800	25	2500	25	2500	25
Styrene			ND	25	ND	25	ND	25	ND	25
Bromoform			ND	25	ND	25	ND	25	ND	25
Iodoform/benzene (Cumene)			160	100	170	100	110	ND	100	ND
1,1,2,2-Tetrachloroethane			ND	25	ND	25	ND	25	ND	25
1,2,3-Trichloropropane			ND	25	ND	25	ND	25	ND	25
Bromobenzene			ND	25	ND	25	ND	25	ND	25
n-Propylbenzene			200	100	320	100	200	ND	100	ND
2-Chlorotoluene			ND	100	ND	100	ND	100	ND	100
4-Chlorotoluene			ND	100	650	100	520	ND	100	ND
1,3,5-Trimethylbenzene			500	100	1000	100	100	ND	100	ND
tert-Butylbenzene			ND	100	ND	100	ND	100	ND	100
1,2,4-Trimethylbenzene			1600	100	1600	100	1600	ND	100	ND
sec-Butylbenzene			140	100	160	100	130	ND	100	ND
1,3-Dichlorobenzene			ND	25	ND	25	ND	25	ND	25
4-Isoopropyltoluene			200	100	240	100	200	ND	100	ND
1,4-Dichlorobenzene			ND	25	ND	25	ND	25	ND	25
n-Butylbenzene			160	100	180	100	160	ND	100	ND
1,2-Dichlorobenzene			ND	25	ND	25	ND	25	ND	25
1,2-Dibromo-3-chloropropane (DBCP)			ND	100	ND	100	ND	100	ND	100
1,2,4-Trichlorobenzene			ND	100	ND	100	ND	100	ND	100
1,2,3-Trichlorobenzene			ND	100	ND	100	ND	100	ND	100
Naphthalene			600	100	530	100	100	ND	100	ND
Hexachlorobutadiene			ND	100	ND	100	ND	100	ND	100
Methyl tert-Butyl Ether			ND	100	ND	100	ND	100	ND	100

**Table 1.2 Results of the Analysis for BMA in CW
WA #3-3C Waste Disposal**
(Results are reported on an 'as received' basis)

Compound	Method Blank		AB 12365 WDI P4		AB 12367 WDI WR		AB 12365 WDI EX1	
	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
N-Nitrosodimethylamine	ND	ND	130	ND	130	ND	ND	130
Aniline	ND	ND	130	ND	130	ND	ND	130
Bis(2-chloroethyl) Ether	ND	ND	50	ND	50	ND	50	50
Phenol	ND	ND	50	ND	50	ND	50	50
2-Chlorophenol	ND	ND	50	ND	50	ND	50	50
1,3-Dichlorobenzene	ND	ND	50	ND	50	ND	50	50
1,4-Dichlorobenzene	ND	ND	50	ND	50	ND	50	50
1,2-Dichlorobenzene	ND	ND	50	ND	50	ND	50	50
Benzyl Alcohol	ND	ND	50	ND	50	ND	50	50
Bis(2-chloroethylpropyl) Ether	ND	ND	50	ND	50	ND	50	50
2-Methylphenol	ND	ND	50	ND	50	ND	50	50
Hexachlorobutane	ND	ND	50	ND	50	ND	50	50
N-Nitroso-N-propylamine	ND	ND	50	ND	50	ND	50	50
4-Methylphenol	ND	ND	50	ND	50	ND	50	50
Nitrobenzene	ND	ND	50	ND	50	ND	50	50
Isophorone	ND	ND	50	ND	50	ND	50	50
2-Nitrophenol	ND	ND	50	ND	50	ND	50	50
2,4-Dimethylphenol	ND	ND	50	ND	50	ND	50	50
Bis(2-chlorophenoxy)methane	ND	ND	50	ND	50	ND	50	50
2,4-Dichlorophenol	ND	ND	50	ND	50	ND	50	50
Benzoic Acid	ND	ND	50	ND	50	ND	50	50
1,2,4-Trichlorobenzene	ND	ND	50	ND	50	ND	50	50
Naphthalene	ND	ND	50	ND	50	ND	50	50
4-Chloronitroline	ND	ND	50	ND	50	ND	50	50
Hexachlorobutadiene	ND	ND	50	ND	50	ND	50	50
2-Methylnaphthalene	ND	ND	50	ND	50	ND	50	50
Hexachlorocyclopentadiene	ND	ND	50	ND	50	ND	50	50
2,4,6-Trichlorophenol	ND	ND	50	ND	50	ND	50	50
2,4,5-Trichlorophenol	ND	ND	50	ND	50	ND	50	50
2-Chloronaphthalene	ND	ND	50	ND	50	ND	50	50
2-Nitrotoluene	ND	ND	50	ND	50	ND	50	50

Table 1.2 (Cont'd) Results of the Analysis for SNA in CW
WA 8-304 Waste Disposed
(Results are reported on an "as received" basis)

Sample #	Location	Dil. Factor	Compound	Method Blank			A,B 12905			A,B 12387			A,B 12385		
				Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
			Acenaphthylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Dimethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Acenaphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			3-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			2,4-Dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Dibenzofuran	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			4-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			2,4-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Fluorane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			4-Chlorophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Diethyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			4-Nitroaniline	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			2-Methyl-4,6-dinitrophenol	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			N-Nitrosodiphenylamine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			4-Bromophenyl Phenyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Hexachlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Pentachlorophenol (PCP)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Phenanthrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Di-n-butyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Butyl Benzyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			3,3'-Dichlorobenzidine	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Benz[1]naphthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Chrysene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Bis(2-ethylhexyl) Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Di-n-octyl Phthalate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Benz[1]fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Benz[1]k fluoranthene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Benz[1]a pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Indeno[1,2,3-cd]pyrene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Dibenz[1,2-h]anthracene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Benz[1,g,h,i]perylene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
			Carbazole	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

00010

**Table 1.2 (Cont) Results of the Analysis for BMA in oil
WA # 3-304 Waste Deposit**
(Results are reported on an "as received" basis)

Sample #	Location	Dil. Factor	Compound	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
			A,B 12325 WDI P3	1		A,B 12386 WDI P1	1	A,B 12388 WDI P2	1		
			N-Nitrodimethylamine	ND	ND	ND	ND	ND	ND	ND	ND
			Aniline	ND	ND	ND	ND	ND	ND	ND	ND
			Bis(2-chloroethyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND
			Phenol	ND	ND	ND	ND	ND	ND	ND	ND
			2-Chlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
			1,3-Dichlorobenzene	200	ND	ND	ND	ND	ND	ND	ND
			1,4-Dichlorobenzene	220	ND	ND	ND	ND	ND	ND	ND
			1,2-Dichlorobenzene	ND	ND	ND	ND	ND	ND	ND	ND
			Benzyl Alcohol	ND	ND	ND	ND	ND	ND	ND	ND
			Ethyl (2-chloroisopropyl) Ether	ND	ND	ND	ND	ND	ND	ND	ND
			2-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
			Hexachlorobutane	ND	ND	ND	ND	ND	ND	ND	ND
			N-Nitrosodi-n-propylamine	ND	ND	ND	ND	ND	ND	ND	ND
			4-Methylphenol	ND	ND	ND	ND	ND	ND	ND	ND
			Nitrobenzene	ND	ND	ND	ND	ND	ND	ND	ND
			Isophorone	ND	ND	ND	ND	ND	ND	ND	ND
			2-Nitrophenol	ND	ND	ND	ND	ND	ND	ND	ND
			2,4-Dimethylphenol	ND	ND	ND	ND	ND	ND	ND	ND
			Ethyl(2-chloroethoxy)methane	ND	ND	ND	ND	ND	ND	ND	ND
			2,4-Dichlorophenol	ND	ND	ND	ND	ND	ND	ND	ND
			Benzoic Acid	75	ND	ND	ND	ND	ND	ND	ND
			1,2,4-Trichlorobenzene	Naphthalene	630	ND	ND	ND	ND	ND	ND
				4-Chloronitroline	ND	ND	ND	ND	ND	ND	ND
				Hexachlorobutadiene	ND	ND	ND	ND	ND	ND	ND
				4-Chloro-3-methylphenol	ND	ND	ND	ND	ND	ND	ND
				2-Methylneopentane	2400	ND	ND	ND	ND	ND	ND
				Hexachlorocyclopentadiene	ND	ND	ND	ND	ND	ND	ND
				2,4,6-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND
				2,4,5-Trichlorophenol	ND	ND	ND	ND	ND	ND	ND
				2-Chloronaphthalene	ND	ND	ND	ND	ND	ND	ND
				2-Nitroaniline	ND	ND	ND	ND	ND	ND	ND
				Acenaphthylene	ND	ND	ND	ND	ND	ND	ND
				Dimethyl Phthalate	ND	ND	ND	ND	ND	ND	ND
				2,6-Dinitrotoluene	ND	ND	ND	ND	ND	ND	ND

00011

Table 1.2 (Cont.) Results of the Analysis for BPA in oil
 WA # 3-304 Waste Disposal
 (Results are reported on an "as received" basis)

Sample # Location DL Factor	A,B 12325 WDI P3 1	A,B 12386 WDI P1 1	A,B 12386 WDI P2 1			
Compound	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
Acenaphthene	180	50	ND	50	180	50
3-Nitroaniline	ND	130	ND	130	ND	130
2,4-Dinitrophenol	ND	130	ND	130	ND	130
Dibenzofuran	85	50	ND	50	ND	50
Fluorene	300	50	ND	50	280	50
4-Chlorophenyl Phenyl Ether	ND	50	ND	50	ND	50
Diethyl Phthalate	ND	50	ND	50	ND	50
4-Nitroaniline	ND	130	ND	130	ND	130
2-Methyl-4,6-dinitrophenol	ND	130	ND	130	ND	130
N-Nitrosodiphenylamine	ND	50	ND	50	ND	50
4-Bromophenyl Phenyl Ether	ND	50	ND	50	ND	50
Hexamethylbenzene	ND	50	ND	50	ND	50
Pentachlorophenol (PCP)	260	50	ND	50	ND	50
Phenanthrene	820	50	ND	50	700	50
Astacene	ND	50	ND	50	ND	50
Di-n-butyl Phthalate	34	J	ND	50	120	50
Fluoranthene	220	50	ND	50	ND	50
Pyrene	180	50	ND	50	ND	50
Butyl Benzyl Phthalate	ND	50	ND	50	ND	50
3,3'-Dichlorobenzidine	ND	50	ND	50	ND	50
Benz(a)anthracene	83	50	ND	50	130	50
Chrysene	ND	50	ND	50	ND	50
Bis(2-ethylhexyl) Phthalate	640	50	ND	50	ND	50
Di-n-octyl Phthalate	ND	50	ND	50	ND	50
Benz(b)fluoranthene	ND	50	ND	50	ND	50
Benzof(k)fluoranthene	ND	50	ND	50	ND	50
Benzof(p)pyrene	ND	50	ND	50	ND	50
Indeno(1,2,3-cd)pyrene	ND	50	ND	50	ND	50
Dibenz(a,h)anthracene	ND	50	ND	50	ND	50
Benzof(g,h)perylene	ND	50	ND	50	ND	50
Carbazole	ND	50	ND	50	ND	50

Table 1.3 Results of the Analysis for Persistent PCBs in All WA # 3-304 Waste Disposal

卷之三

Client ID Location	Analyte	Method Blank		A,B 12325 WDI P3		A,B 12386 WDI P1		A,B 12386 WDI P2	
		Conc mg/Kg	MDL mg/Kg	Conc mg/Kg	MDL mg/Kg	Conc mg/Kg	MDL mg/Kg	Conc mg/Kg	MDL mg/Kg
	alpha-BHC	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	beta-BHC	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	gamma-BHC (Lindane)	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	data-BHC	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Heptachlor	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Altrin	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Heptachlor Epoxide	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	gamma-Chlordene	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Endosulfan I	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	alpha-Chlordene	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Dieldrin	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	4,4'-DDE	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Erodin	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Endosulfan II	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	4,4'-DDD	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Erofin Aldehyde	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Endosulfan Sulfate	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	4,4'-DDT	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Methoxychlor	ND	0.1	ND	1.0	ND	1.0	ND	1.0
	Toxaphene	ND	0.1	ND	1.0	ND	1.0	ND	1.0
100	Aroclor 1016	ND	0.1	ND	1.0	ND	1.0	ND	1.0
100	Aroclor 1221	ND	0.1	ND	1.0	ND	1.0	ND	1.0
100	Aroclor 1232	ND	0.1	ND	1.0	ND	1.0	ND	1.0
100	Aroclor 1242	ND	0.1	ND	1.0	ND	1.0	ND	1.0
100	Aroclor 1248	ND	0.1	ND	1.0	ND	1.0	ND	1.0
100	Aroclor 1254	ND	0.1	ND	1.0	ND	1.0	ND	1.0
100	Aroclor 1260	ND	0.1	ND	1.0	ND	1.0	ND	1.0
300	Aroclor 1016	ND	0.1	ND	1.0	ND	1.0	ND	1.0
300	Aroclor 1221	ND	0.1	ND	1.0	ND	1.0	ND	1.0
300	Aroclor 1232	ND	0.1	ND	1.0	ND	1.0	ND	1.0
300	Aroclor 1242	ND	0.1	ND	1.0	ND	1.0	ND	1.0
300	Aroclor 1248	ND	0.1	ND	1.0	ND	1.0	ND	1.0
300	Aroclor 1254	ND	0.1	ND	1.0	ND	1.0	ND	1.0
300	Aroclor 1260	ND	0.1	ND	1.0	ND	1.0	ND	1.0
4.8	Aroclor 1016	ND	0.1	ND	1.0	ND	1.0	ND	1.0
4.8	Aroclor 1221	ND	0.1	ND	1.0	ND	1.0	ND	1.0
4.8	Aroclor 1232	ND	0.1	ND	1.0	ND	1.0	ND	1.0
4.8	Aroclor 1242	ND	0.1	ND	1.0	ND	1.0	ND	1.0
4.8	Aroclor 1248	ND	0.1	ND	1.0	ND	1.0	ND	1.0
4.8	Aroclor 1254	ND	0.1	ND	1.0	ND	1.0	ND	1.0
4.8	Aroclor 1260	ND	0.1	ND	1.0	ND	1.0	ND	1.0
2.3	Aroclor 1016	ND	0.1	ND	1.0	ND	1.0	ND	1.0
2.3	Aroclor 1221	ND	0.1	ND	1.0	ND	1.0	ND	1.0
2.3	Aroclor 1232	ND	0.1	ND	1.0	ND	1.0	ND	1.0
2.3	Aroclor 1242	ND	0.1	ND	1.0	ND	1.0	ND	1.0
2.3	Aroclor 1248	ND	0.1	ND	1.0	ND	1.0	ND	1.0
2.3	Aroclor 1254	ND	0.1	ND	1.0	ND	1.0	ND	1.0
2.3	Aroclor 1260	ND	0.1	ND	1.0	ND	1.0	ND	1.0

**Table 1.3 (Cont) Results of the Analysis for PentachloroPCBs in OIL
WA # 3-304 Waste Disposal**
(Results are reported on an "as received" basis)

Client ID Location	Analyte	A,B 12387 WDI W9		A,B 12385 WDI EX1		A,B 12385 WDI P4	
		Conc mg/Kg	MDL mg/Kg	Conc mg/Kg	MDL mg/Kg	Conc mg/Kg	MDL mg/Kg
	alpha-BHC	ND	1.0	ND	1.0	ND	1.0
	beta-BHC	ND	1.0	ND	1.0	ND	1.0
	gamma-BHC (Lin dane)	ND	1.0	ND	1.0	ND	1.0
	delta-BHC	ND	1.0	ND	1.0	ND	1.0
	Heptachlor	ND	1.0	ND	1.0	ND	1.0
	Aldrin	ND	1.0	ND	1.0	ND	1.0
	Heptachlor Epoxide	ND	1.0	ND	1.0	ND	1.0
	Gamma-Chlordane	ND	1.0	ND	1.0	ND	1.0
	Endosulfan I	ND	1.0	ND	1.0	ND	1.0
	alpha-Chlordane	ND	1.0	ND	1.0	ND	1.0
	Dieldrin	ND	1.0	ND	1.0	ND	1.0
	4,4'-DDE	ND	2.0	ND	1.0	ND	1.0
	Ecdrin	ND	1.0	ND	1.0	ND	1.0
	Endosulfan II	ND	1.0	ND	1.0	ND	1.0
	4,4'-DDD	ND	1.0	ND	1.0	ND	1.0
	Ecdrin Aldehyde	ND	1.0	ND	1.0	ND	1.0
	Endosulfan Sulfate	ND	1.0	ND	1.0	ND	1.0
	4,4'-DDT	ND	1.0	ND	1.0	ND	1.0
	Methoxychlor	ND	1.0	ND	1.0	ND	1.0
	Toxaphene	ND	3	ND	3	ND	3
	Aroclor 1016	ND	1	ND	1	ND	1
	Aroclor 1221	ND	1	ND	1	ND	1
	Aroclor 1232	ND	1	ND	1	ND	1
	Aroclor 1242	ND	1	ND	1	ND	1
	Aroclor 1248	ND	1	ND	1	ND	1
	Aroclor 1254	7.9	1	9.7	1	4.3	1
	Aroclor 1260	2.8	1	3.0	1	1.2	1

**Table 1.4 Results of the Analysis for Metals in CI
WA 6 3-304 Waste Disposal
(Results are reported on an "as received" basis)**

Sample # Location	Method Blank		A,B 12366 WDI P2		A,B 12305 WDI P4		A,B 12367 WDI VW9	
Metal	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
Aluminum, Total	ND	10	14	10	25	10	101	10
Antimony, Total	ND	5	ND	5	ND	5	ND	5
Arsenic, Total	ND	0.5	0.6	0.5	0.6	0.5	2.5	0.5
Barium, Total	ND	0.5	6.1	0.5	3.1	0.5	52.6	0.5
Beryllium, Total	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Cadmium, Total	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Calcium, Total	ND	5	409	5	243	5	336	5
Chromium, Total	ND	2	3	2	4	2	7	2
Cobalt, Total	ND	1	ND	1	ND	1	ND	1
Copper, Total	ND	1	ND	1	ND	1	3	1
Iron, Total	ND	2	18	2	17	2	89	2
Lead, Total	ND	10	ND	10	ND	10	19	10
Magnesium, Total	ND	10	15	10	15	10	36	10
Manganese, Total	ND	0.5	1.8	0.5	1.4	0.5	1.6	0.5
Mercury, Total	ND	0.2	ND	0.2	ND	0.2	ND	0.2
Nickel, Total	ND	5	23	5	20	5	22	5
Potassium, Total	ND	200	ND	200	ND	200	U	200
Selenium, Total	ND	1	2	1	3	1	2	1
Silver, Total	ND	1	ND	1	ND	1	ND	1
Sodium, Total	ND	2	6	2	2	2	53	2
Thallium, Total	ND	0.5	ND	0.5	ND	0.5	ND	0.5
Vanadium, Total	ND	1	17	1	12	1	18	1
Zinc, Total	ND	3	3	3	3	3	5	3

Table 1.4 (Cont) Results of the Analysis for Metals in Oil
WA # 3-304 Waste Disposal
(Results are reported on an "as received" basis)

Sample # Location	A,B 12385 WDI EX1		A,B 12325 WDI P3		A,B 12386 WDI P1	
Metal	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
Aluminum, Total	98	10	116	10	65	10
Antimony, Total	ND	5	ND	5	ND	5
Arsenic, Total	3.3	0.5	2.4	0.5	1.7	0.5
Barium, Total	32.5	0.5	27.8	0.5	17.2	0.5
Beryllium, Total	ND	0.5	ND	0.5	ND	0.5
Cadmium, Total	2.8	0.5	ND	0.5	ND	0.5
Calcium, Total	530	5	336	5	388	5
Chromium, Total	11	2	85	2	10	2
Cobalt, Total	ND	1	3	1	1	1
Copper, Total	2	1	2	1	4	1
Iron, Total	38	2	58	2	49	2
Lead, Total	17	10	21	10	13	10
Magnesium, Total	30	10	26	10	20	10
Manganese, Total	4.2	0.5	5.6	0.5	12.8	0.5
Mercury, Total	ND	0.2	ND	0.2	ND	0.2
Nickel, Total	21.5	5	20	5	21	5
Potassium, Total	ND	200	U	200	ND	200
Selenium, Total	2	1	4	1	3	1
Silver, Total	ND	1	ND	1	ND	1
Sodium, Total	18	2	8	2	6	2
Thallium, Total	ND	0.5	ND	0.5	ND	0.5
Vanadium, Total	15	1	19	1	14	1
Zinc, Total	5	3	8	3	7	3

QA/QC for VOC

Each sample was spiked with a three component mixture of CLP surrogate standards consisting of toluene-d₆, 4-bromofluorobenzene and dibromofluoromethane. The surrogate percent recoveries , listed in Table 2.1, ranged from 95 to 140. Twenty-two out of thirty values were within the acceptable QC limits.

Sample 12388 was chosen for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The percent recoveries, ranging from 82 to 122, are listed in Table 2.2. The relative percent differences, also listed in Table 2.2, ranged from 0 (zero) to 40. QC limits are not available for this analysis.

A laboratory control sample was also analyzed. The percent recoveries, listed in Table 2.3, ranged from 56 to 100. QC limits are not available for this analysis.

**Table 2.1 Results of the Surrogate Recoveries
for VOC in Oil
WA # 3-304 Waste Disposal**

Sample ID	S1 (DFM)	S2 (TOL)	S3 (BFB)	Total Out
A,B 12525	99	100	122	• 1
A,B 12386	97	101	140	• 1
A,B 12388	97	100	135	• 1
A,B 12505	95	100	134	• 1
A,B 12387	95	99	133	• 1
A,B 12385	97	101	140	• 1
A,B 12388 MS	95	99	138	• 1
A,B 12388 MSD	95	100	139	• 1
LCS	98	103	103	0
Method Blank	99	100	95	0

QC Limits

S1 (DFM) = Dibromofluoromethane 80-120

S2 (TOL) = Toluene-d8 81-117

S3 (BFB) = Bromofluorobenzene 74-121

Table 2.2 Results of the MS/MSD Analysis for VOC in Oil
WA # 3-304 Waste Disposal
(Results are reported on an "as received" basis)

Sample ID: A.B 12368

Parameter	Spike Added mg/kg	Sample Conc. mg/kg	MS		MSD		RPD
			Rec mg/kg	% Rec	Rec (ug/kg)	% Rec	
1,1-Dichloroethene (1,1-DCE)	490	U	570	116	510	104	11
Benzene	490	170	880	106	640	96	10
Trichloroethene (TCE)	490	290	880	122	830	110	11
Toluene	490	1000	1400	82	1400	82	0
Chlorobenzene	490	U	530	108	500	102	6
1,2-Dichlorobenzene	490	U	500	102	470	96	6
Naphthalene	490	600	1000	82	1200	122	40

Table 2.3 Results of the Analysis of the Laboratory Control Sample
for VOC in Oil
WA # 3-304 Waste Deposit

Analyte	Sample Conc mg/kg	Spikes Conc mg/kg	Rec Conc mg/kg	% Rec
1,1-Dichloroethene (1,1-DCE)	U	1	0.93	93
Benzene	U	1	0.97	97
Trichloroethene (TCE)	U	1	1.0	100
Toluene	U	1	1.0	100
Chlorobenzene	U	1	0.95	95
1,2-Dichlorobenzene	U	1	0.87	87
Naphthalene	U	1	0.56	56

QA/QC for BNA

Before extraction, each sample was spiked with a six component mixture of CLP surrogate standards consisting of nitrobenzene-d₅, 2-fluorobiphenyl, terphenyl-d₁₄, phenol-d₅, 2-fluorophenol, and 2,4,6-tribromophenol. The surrogate percent recoveries, listed in Table 2.4, ranged from 55 to 156. Sixty-three values out of sixty-six values were within the acceptable QC limits. Forty-two other values were from diluted samples and the surrogate was not recovered.

Sample 12385 was chosen for the matrix spike/matrix spike duplicate (MS/MSD) analyses. The percent recoveries, ranging from 14 to 126, are listed in Table 2.5. The relative percent differences, ranging from 0 (zero) to 73, are also listed in Table 2.5. QC limits are not available for this analysis.

A laboratory control sample was also spiked and analyzed. The percent recoveries ranged from 0 (zero) to 82 and are listed in Table 2.6. QC limits are not available for this analysis.

Sample A,B 12525 was chosen for the duplicate analyses. The relative percent differences, listed in Table 2.7, ranged from 0 (zero) to 73. The relative percent differences were not calculated for 52 analytes because these analytes were not detected in either analysis. There are no QC limits available for this analysis.

**Table 2.4 Results of the Surrogate Recoveries for BNA In Oil
WA # 3-304 Waste Disposal**

Sample ID	S1 (2FP)	S2 (PHL)	S3 (NBZ)	S4 (FBP)	S5 (TBP)	S6 (TPH)	Total Out
A,B 12525	55	55	80	90	93	120	0
A,B 12525 Dup	81	86	80	86	156	127	1
A,B 12386	82	79	72	86	124	109	1
A,B 12388	68	69	62	87	116	104	0
A,B 12505	62	57	80	92	98	121	0
A,B 12387	64	67	69	86	106	115	0
A,B 12385	58	61	65	84	106	111	0
A,B 12385 MS	85	85	76	86	127	103	1
A,B 12385 MSD	89	85	74	81	103	104	0
LCS	75	75	76	81	72	112	0
Method Blank	71	73	73	84	88	120	0
A,B 12525 (1:10)	D	D	D	D	D	D	0
A,B 12525 Dup (1:10)	D	D	D	D	D	D	0
A,B 12386 (1:10)	D	D	D	D	D	D	0
A,B 12388 (1:10)	D	D	D	D	D	D	0
A,B 12505 (1:10)	D	D	D	D	D	D	0
A,B 12387 (1:10)	D	D	D	D	D	D	0
A,B 12385 (1:10)	D	D	D	D	D	D	0

QC Limits

S1 (2FP) = 2-Fluorophenol	25-121
S2 (PHL) = Phenol-d5	24-113
S3 (NBZ) = Nitrobenzene-d5	23-120
S4 (FBP) = 2-Fluorobiphenyl	30-115
S5 (TBP) = 2,4,6-Tribromophenol	19-122
S6 (TPH) = Terphenyl-d14	18-137

**Table 2.5 Results of MS/MSD Analysis for BMA in CII
WA #3-304 Waste Disposal**
(Results are calculated on an "as received" basis)

Sample ID: A,B 12385

Compound Name	Sample Conc mg/kg	MS Spikes mg/kg	MS Added mg/kg	MS Spikes mg/kg	MS Added mg/kg	MS Conc mg/kg	MS % Rec.	MS % Rec.	MSD Rec.	MSD Rec.	RPD
Phenol	U	750	630	560	420	75	67	11	6	0	
2-Chlorophenol	U	750	630	620	460	63	78	6	0		
1,4-Dichlorobenzene	U	500	420	430	360	86	86	0			
4-Nitroso-di-n-propylamine	U	500	420	530	126	126	126	0			
1,2,4-Trichlorobenzene	U	500	420	490	470	98	112	13			
4-Chloro-3-Methylphenol	U	750	630	620	88	98	98	11			
Arenaphthene	U	500	420	520	370	104	88	17			
4-Nitrophenol	U	750	630	630	680	111	108	2			
2,4-Dinitrophenol	U	500	420	490	370	88	88	11			
Pentachlorophenol	U	750	630	100	190	14	30	73			
Pyrene	91	500	420	380	320	58	55	6			

**Table 2.6 Results of the Analysis of the Laboratory Control Sample
for BNA in Oil
WA #3-304 Waste Disposed**

Analyte	Sample Conc mg/kg	Spikes Conc mg/kg	Rec Conc mg/kg	% Rec
Phenol	U	740	520	70
2-Chlorophenol	U	740	580	78
1,4-Dichlorobenzene	U	500	390	78
N-Nitroso-di-n-propylamine	U	500	400	80
1,2,4-Trichlorobenzene	U	500	410	82
4-Chloro-3-Methylphenol	U	740	570	77
Aceanaphthalene	U	500	370	74
4-Nitrophenol	U	740	540	73
2,4-Dinitrotoluene	U	500	380	76
Pentachlorophenol	U	740	ND	0
Pyrene	U	500	310	62

**Table 2.7 Results of the Duplicate Analysis
for BNA in Oil
WA # 3-304 Waste Disposal**

Analyte	Sample ID	Initial Analysis mg/kg	Duplicate Analysis mg/kg	RPD
N-Nitrosodimethylamine	A,B 12525	ND	ND	NC
Aniline	A,B 12525	ND	ND	NC
Bis(2-chloroethyl) Ether	A,B 12525	ND	ND	NC
Phenol	A,B 12525	ND	ND	NC
2-Chlorophenol	A,B 12525	ND	ND	NC
1,3-Dichlorobenzene	A,B 12525	ND	ND	NC
1,4-Dichlorobenzene	A,B 12525	200	200	0
1,2-Dichlorobenzene	A,B 12525	220	220	0
Benzyl Alcohol	A,B 12525	ND	ND	NC
Bis(2-chloroisopropyl) Ether	A,B 12525	ND	ND	NC
2-Methylphenol	A,B 12525	ND	ND	NC
Hexachloroethane	A,B 12525	ND	ND	NC
N-Nitrosodi-n-propylamine	A,B 12525	ND	ND	NC
4-Methylphenol	A,B 12525	ND	ND	NC
Nitrobenzene	A,B 12525	ND	ND	NC
Isophorone	A,B 12525	ND	ND	NC
2-Nitrophenol	A,B 12525	ND	ND	NC
2,4-Dimethylphenol	A,B 12525	ND	ND	NC
Bis(2-chloroethoxy)methane	A,B 12525	ND	ND	NC
2,4-Dichlorophenol	A,B 12525	ND	ND	NC
Benzoic Acid	A,B 12525	ND	ND	NC
1,2,4-Trichlorobenzene	A,B 12525	75	ND	NC
Naphthalene	A,B 12525	630	610	3
4-Chloroaniline	A,B 12525	ND	ND	NC
Hexachlorobutadiene	A,B 12525	ND	ND	NC
4-Chloro-3-methylphenol	A,B 12525	ND	ND	NC
2-Methylnaphthalene	A,B 12525	2400	2300	4
Hexachlorocyclopentadiene	A,B 12525	ND	ND	NC
2,4,6-Trichlorophenol	A,B 12525	ND	ND	NC
2,4,5-Trichlorophenol	A,B 12525	ND	ND	NC
2-Chloronaphthalene	A,B 12525	ND	ND	NC
2-Nitroaniline	A,B 12525	ND	ND	NC

**Table 2.7 (Cont) Results of the Duplicate Analysis
for BMA In Oil
WA # 3-304 Waste Disposal**

Analyte	Sample ID	Initial Analysis mg/kg	Duplicate Analysis mg/kg	RPD
Acenaphthylene	A,B 12525	ND	ND	NC
Dimethyl Phthalate	A,B 12525	ND	ND	NC
2,6-Dinitrotoluene	A,B 12525	ND	ND	NC
Acenaphthene	A,B 12525	180	170	11
3-Nitroantiline	A,B 12525	ND	ND	NC
2,4-Dinitrophenol	A,B 12525	ND	ND	NC
Dibenzofuran	A,B 12525	86	130	41
4-Nitrophenol	A,B 12525	ND	ND	NC
2,4-Dinitrotoluene	A,B 12525	ND	ND	NC
Fluorene	A,B 12525	300	290	3
4-Chlorophenyl Phenyl Ether	A,B 12525	ND	ND	NC
Diethyl Phthalate	A,B 12525	ND	ND	NC
4-Nitroantiline	A,B 12525	ND	ND	NC
2-Methyl-4,6-dinitrophenol	A,B 12525	ND	ND	NC
N-Nitrosodiphenylamine	A,B 12525	ND	ND	NC
4-Bromophenyl Phenyl Ether	A,B 12525	ND	ND	NC
Hexachlorobenzene	A,B 12525	ND	ND	NC
Pentachlorophenol (PCP)	A,B 12525	280	130	73
Phenanthrene	A,B 12525	820	850	4
Anthracene	A,B 12525	680	680	3
Di-n-butyl Phthalate	A,B 12525	34	36	6
Fluoranthene	A,B 12525	220	220	0
Pyrene	A,B 12525	190	190	0
Butyl Benzyl Phthalate	A,B 12525	ND	ND	NC
3,3'-Dichlorobenzidine	A,B 12525	ND	ND	NC
Benz(a)anthracene	A,B 12525	53	60	12
Chrysene	A,B 12525	83	80	8
Bis(2-ethylhexyl) Phthalate	A,B 12525	640	710	10
Di-n-octyl Phthalate	A,B 12525	ND	ND	NC
Benzo(b)fluoranthene	A,B 12525	ND	ND	NC
Benzo(k)fluoranthene	A,B 12525	ND	ND	NC
Benzo(a)pyrene	A,B 12525	ND	ND	NC
Indeno(1,2,3-cd)pyrene	A,B 12525	ND	ND	NC
Dibenz(a,h)anthracene	A,B 12525	ND	ND	NC
Benzo(g,h,i)perylene	A,B 12525	ND	ND	NC
Carbazole	A,B 12525	ND	ND	NC

QA/QC for Pesticides

Each sample was spiked with a solution of tetrachloro-m-xylene and decachlorobiphenyl as surrogates. Percent recoveries for the water samples ranged from 49 to 84 and are listed in Table 2.8. Twelve out of twenty values were within the REAC QC limits.

Sample A,B 12385 was chosen for the duplicate analyses of Aroclor 1254 and Aroclor 1260. The relative percent differences, listed in Table 2.9, were 3 and 9. There are no QC limits available for this analysis.

A laboratory control spike/laboratory control spike duplicate (LCS/LCSD) analysis was also performed. The percent recoveries ranged from 50 to 70 and are listed in Table 2.10. The relative percent differences (RPDs) were all 0 (zero) and all six percent recoveries and all six RPDs were within the acceptable QC limits.

Table 2.8 Results of the Surrogate Recoveries
for Pesticides/PCBs in Oil
WA # 3-304 Waste Disposal

Sample ID	% Recovery	
	TCMX	DCB
A,B 12525	84	78
A,B 12386	68	72
A,B 12388	81	56
A,B 12505	52	62
A,B 12387	53	65
A,B 12385	49	60
A,B 12385 DUP	49	59
LCS	73	74
LCSD	69	51
Method Blank	75	56

TCMX denotes Tetrachloro-m-xylene

DCBP denotes Decachlorobiphenyl

REAC Recovery Limits

TCMX 60-150
DCBP 60-150

**Table 2.8 Results of the Duplicate Analysis
for Pesticides/PCBs in Oil
WA # 3-304 Waste Disposal**

Analyte	Sample ID	Initial Analysis mg/kg	Duplicate Analysis mg/kg	RPD
Aroclor 1254	A,B 12385	9.7	10.6	9
Aroclor 1260	A,B 12385	3.0	3.1	3

**Table 2.10 Results of the LCS/LCSD Analysis for Pesticide/PCB In Oil
WA 8-3-304 Waste Disposal**

Sample ID Laboratory Control Sample

Compound	Sample	Spikes	LCS	LCS	Spikes	LCSD	LCSD	QC Limit		
	Conc	Added	Conc	%	Added	Conc	%	%	QC Limit	
	mg/kg	mg/kg	mg/kg	Rec	(μ g/L)	(μ g/L)	Rec	Rec	RPD	
g-BHC	U	1.0	0.7	70	1.0	0.7	70	0	46-127	50
Heptachlor	U	1.0	0.7	70	1.0	0.7	70	0	35-130	31
Aldrin	U	1.0	0.6	60	1.0	0.6	60	0	34-132	43
Dieldrin	U	1.0	0.6	60	1.0	0.6	60	0	31-134	38
Endrin	U	1.0	0.6	60	1.0	0.6	60	0	42-139	45
p,p'-DDT	U	1.0	0.5	50	1.0	0.5	50	0	23-134	50

QA/QC for Metals

Sample A,B 12525 was chosen for the matrix spike (MS) analysis. The percent recoveries, listed in Table 2.11, ranged from 64 to 112 and all seventeen reported values were within the acceptable QC limits. Two values were not calculated because the concentration spiked was less than the concentration of analyte in the sample.

Sample A,B 12525 was also chosen for the duplicate analyses. The reported relative percent differences, listed in Table 2.12, ranged from 0 (zero) to 29. The relative percent difference was not calculated for seven samples because the analyte was not detected in either analysis. There are no QC limits available for this analysis.

A laboratory control sample was also analyzed. The percent recoveries ranged from 94 to 111 and are listed in Table 2.13. All nineteen values were within the acceptable QC limits.

**Table 2.11 Results of the Matrix Spike Analysis for Metals in CII
WA # 3-304 Waste Disposal
(Results are reported on an "as received" basis)**

Sample ID A,B 12525

Metal	Sample ID	Sample Conc mg/kg	Spike Conc mg/kg	Rec Conc mg/kg	% Rec	QC Limits
Aluminum, Total	A,B 12525	116	200	328	106	60-130
Antimony, Total	A,B 12525	ND	50	43.9	88	30-120
Arsenic, Total	A,B 12525	2.4	4	6.3	98	60-130
Barium, Total	A,B 12525	27.8	200	224	88	60-130
Beryllium, Total	A,B 12525	ND	5	5.0	100	60-130
Cadmium, Total	A,B 12525	ND	5	5.1	102	60-130
Chromium, Total	A,B 12525	85	20	113	NC	60-130
Cobalt, Total	A,B 12525	3	50	47	88	60-130
Copper, Total	A,B 12525	2	25	25	92	60-130
Iron, Total	A,B 12525	58	100	140	82	60-130
Lead, Total	A,B 12525	21	50	73	104	60-130
Manganese, Total	A,B 12525	5.6	50	55.5	100	60-130
Mercury, Total	A,B 12525	ND	2.1	2.0	95	60-130
Nickel, Total	A,B 12525	20	50	65	90	60-130
Selenium, Total	A,B 12525	4	1	6	NC	60-130
Silver, Total	A,B 12525	ND	5	4.9	98	60-130
Thallium, Total	A,B 12525	ND	5	3.2	64	60-130
Vanadium, Total	A,B 12525	19	50	75	112	60-130
Zinc, Total	A,B 12525	8	50	54	92	60-130

**Table 2.12 Results of the Duplicate Analysis
for Metals in Oil**
WA # 3-304 Waste Disposal
(Results are reported on an "as received" basis)

Sample ID A,B 12525

Analyte	Sample ID	Initial Analysis mg/kg	Duplicate Analysis mg/kg	RPD
Aluminum, Total	A,B 12525	116	125	7
Antimony, Total	A,B 12525	ND	ND	NC
Arsenic, Total	A,B 12525	2.4	2.5	4
Barium, Total	A,B 12525	27.8	28.2	1
Beryllium, Total	A,B 12525	ND	ND	NC
Cadmium, Total	A,B 12525	ND	ND	NC
Calcium, Total	A,B 12525	336	331	1
Chromium, Total	A,B 12525	85	80	6
Cobalt, Total	A,B 12525	3	3	0
Copper, Total	A,B 12525	2	2	0
Iron, Total	A,B 12525	58	59	2
Lead, Total	A,B 12525	21	21	0
Magnesium, Total	A,B 12525	26	26	0
Manganese, Total	A,B 12525	5.6	5.7	2
Mercury, Total	A,B 12525	ND	ND	NC
Nickel, Total	A,B 12525	20	21	5
Potassium, Total	A,B 12525	2	ND	NC
Selenium, Total	A,B 12525	4	3	29
Silver, Total	A,B 12525	ND	ND	NC
Sodium, Total	A,B 12525	6	5	18
Thallium, Total	A,B 12525	ND	ND	NC
Titanium, Total	A,B 12525	19	20	5
Zinc, Total	A,B 12525	8	7	12

**Table 2.13 Results of the Analysis
of the Laboratory Control Sample for Metals In Oil
WA # 3-304 Waste Disposal**

Metal	Analyzed Value µg/kg	Certified Value µg/kg	% Rec	Limits %
Aluminum, Total	2110	2000	106	85-115
Antimony, Total	515	500	103	85-115
Arsenic, Total	37.6	40	94	85-115
Barium, Total	2070	2000	104	85-115
Beryllium, Total	49.0	50	98	85-115
Cadmium, Total	53.2	50	106	85-115
Chromium, Total	213	200	107	85-115
Cobalt, Total	496	500	99	85-115
Copper, Total	246	250	98	85-115
Iron, Total	936	1000	94	85-115
Lead, Total	532	500	106	85-115
Manganese, Total	506	500	101	85-115
Mercury, Total	4.1	4	102	85-115
Nickel, Total	477	500	95	85-115
Selenium, Total	10.5	10	105	85-115
Silver, Total	55.7	50	111	85-115
Thallium, Total	51	50	102	85-115
Vanadium, Total	553	500	111	85-115
Zinc, Total	497	500	99	85-115



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

Columbia Analytical Services, Inc.
PO Box 479, 1317 South 13th Ave
Kelso, Washington, 98626

Attn: Teena Jones

8 May 1998

Project # 3347-142-001-2304 Waste Disposal Inc.

As per Weston REAC Purchase Order number 92826, please analyze samples according to the following parameters:

Analysis/Method	Matrix	# of samples
VOA/ SW-846-5035/ 8260B *	Organic Liquid	6
BNA/ SW-846-8270B *	Organic Liquid	6
TAL Metals / SW-846-6010 or Series 7000 *	Organic Liquid	6
Pest/PCB/ SW-846-8080 *	Organic Liquid	6

Data package: See attached Deliverables Requirements plus diskette deliverable.

* See attached compound list

Samples are expected to arrive at your laboratory on May 9, 1998. All applicable QA/QC analysis as per method, will be performed on our sample matrix. Preliminary sample result tables plus a signed copy of our Chain of Custody must be faxed to REAC 10 business days after receipt of the last samples. The complete data package is due 21 business days after receipt of last batch of samples. The complete data package must include all items on the deliverables checklist.

Please submit all reports and technical questions concerning this project to John Johnson at (732) 321-4248 or fax to (732) 321-4392. Any contractual question, please call Cynthia Lentini at (732) 321-4296.

Sincerely,

Misty Barkley

Data Validation and Report Writing Group Leader
Roy F. Weston, Inc. / REAC Project

MB:jj Attachments

cc. R. Singhvi
 B. Coakley
 2304\non\mem\9805\sub\2304Con8

V. Kansal
Subcontracting File
C. Gasser

C. Lentini
E. McGovern
M. Barkley

00035

Click to WESTON On The Web <http://www.rfweston.com>





Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

June 9, 1998

Teena Jones
Columbia Analytical Services
1317 South 13th Avenue
Keisa, Washington 98626

RE: Project # 03347-143-001-3304 Waste Disposal Inc.
CAS Request No. K9802964

Dear Teena:

In our review of the above data packages, we are requesting clarification on the following:

- 1.) Please explain how you are achieving the calculated final volume on the extraction log.
- 2.) We could not achieve the response factors for Pentachlorophenol for the 10, 20, 100 & 120ppb initial calibration standards. Please comment.
- 3.) Verify that the tune compound DFTPP is included in your continuing calibration check standard SVM5-10B. Please provide the standard make-up data for this mix.

If you have any questions on any of the above request, you may reach Ray Varsolona at (732) 494-4054.

Thank you,

A handwritten signature in black ink that reads "Misty Barkley".

Misty Barkley
Data Validation/Report Writing Group Leader
REAC/Roy F. Weston

00036



**REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022**

CHANGES OF CUSTODY RECORD

Project Name: WASTE DISPOSAL, INC.

Project Number: 2324

RFW Contact: ED MCGOVERN Phone: 732 494 4008

No: 04219

No: 04219

SHEET NO 2 OF 2

Sample Identification

Analyses Requested

100

SD - Sediment
DS - Drum Solids
DL - Drum Liquids
X - Other

**PW - Potable Water
GW - Groundwater
SW - Surface Water
SI - Sludge**

S - Soil
W - Water
O - Oil
A - Air

Special Instructions:

FOR SUBCONTRACTING USE ONLY

**FROM CHAIN OF
CUSTODY #**

Appendix B

Appendix B

APPENDIX B
FINAL ANALYTICAL REPORT
EX-1 BARREL 1, EX-2 COMPOSITE OIL
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CALIFORNIA
MAY 1999

LM\FR\00085



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

DATE: 12 August 1998

TO: R. Singhvi EPA/ERTC

FROM: V. Kansal Analytical Section Leader *Vinod Kansal*

SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 3-304

Attached please find the following document prepared under this work assignment:

Waste Disposal, Inc. - Analytical Report

Central File WA # 3-304

W. Coakley

G. Newhart

M. Barkley

(w/attachment)

Work Assignment Manager (w/attachment)

Task Leader (w/attachment)

Data Validation and Report Writing

Group Leader (w/o attachment)

3304 DEL AR 9808 WDI_AR



Click to WESTON On The Web <http://www.rfweston.com>

ANALYTICAL REPORT

Prepared by
Roy F. Weston, Inc.

Waste Disposal, Inc.
Santa Fe Springs, CA

August 1998

EPA Work Assignment No. 3-304
WESTON Work Order No. 03347-143-001-3304-01
EPA Contract No. 68-C4-0022

Submitted to
W. Coakley
EPA-ERTC

Marc Newhart 8/11/98
for
G. Newhart Date
Task Leader

Vinit Kansal 8/13/98
V. Kansal Date
Analytical Section Leader

E. Gilardi 8/13/98
E. Gilardi Date
Program Manager

Analysis by:
Columbia Analytical Services

Prepared by:
N. McGuire

Reviewed by:
M. Barkley

Table of Contents

Topic	Page Number
Introduction	Page 1
Case Narrative	Page 1
Summary of Abbreviations	Page 3
 Section I	
Analytical Procedure for VOC in Oil	Page 4
Analytical Procedure for BNA in Oil	Page 4
Analytical Procedure for Pesticides/PCBs in Oil	Page 4
Results of the Analysis for VOC in Oil	Table 1.1 Page 5
Results of the Analysis for BNA in Oil	Table 1.2 Page 7
Results of the Analysis for Pesticides/PCBs in Oil	Table 1.3 Page 9
 Section II	
QA/QC for VOC	Page 10
Results of the Surrogate Recoveries for VOC in Oil	Table 2.1 Page 11
Results of the MS/MSD Analysis for VOC in Oil	Table 2.2 Page 12
Results of the LCS/LCSD Analysis for VOC in Water	Table 2.3 Page 13
QA/QC for BNA	Page 14
Results of the Surrogate Recoveries for BNA in Oil	Table 2.4 Page 15
Results of the LCS/LCSD Analysis for BNA (Oil)	Table 2.5 Page 16
QA/QC for Pesticides/PCBs	Page 17
Results of the Surrogate Recoveries for Pesticides/PCBs in Oil	Table 2.6 Page 18
Results of the LCS/LCSD Analysis for Pesticides/PCBs (Oil)	Table 2.7 Page 19
 Section III	
Communications	Page 20
Chain of Custody	Page 23
Appendix A Data for VOC in Oil	Page H327 001
Appendix B Data for BNA in Oil	Page H326 001
Appendix C Data for Pesticides/PCBs in Oil	Page H328 001
 Appendices will be furnished on request.	

Introduction

REAC, in response to WA #3-304, provided analytical support for environmental samples collected from the Waste Disposal, Inc. site, located in Santa Fe Springs, CA, as described in the following table. The support also included QA/QC, data review, and preparation of an analytical report containing a summary of the analytical methods, the results, and the QA/QC results.

COC #	Number of Samples	Sampling Date	Date Received	Matrix	Analysis	Laboratory
05439	2	06/30/98	07/01/98	Oil	VOC BNA Pest/PCB	Columbia Analytical Services

Case Narrative

Data Package H327 — VOC in Oil

Compounds having concentrations below the method detection limit were reported as "not detected".

In the initial calibration of July 4, 1998 and the continuing calibrations of July 14, 1998 and July 17, 1998, the response factors for acetone, 2-butanone, and 4-methyl-2-pentanone were less than 0.05. Results for these compounds are rejected in samples A13316, A13317, Method Blank (07/14), and Method Blank (07/17).

1,2-dibromo-3-chloropropane was not detected in the 0.3 µg/L standard in the initial calibration of July 4, 1998. The Method Detection Limit for this compound is based on the second-lowest initial calibration standard (2.0 µg/L).

In the initial calibration of July 4, 1998, the percent relative standard deviation (%RSD) exceeded the QC limits for 4-methyl-2-pentanone (38), 2-hexanone (37), and hexachlorobutadiene (31). None of these compounds was detected in any of the associated samples; the data are not affected.

Data Package H326 — BNA in Oil

In the initial calibration of July 13, 1998, the percent relative standard deviation (%RSD) for chrysene (16) exceeded the QC limits. The concentrations of chrysene in samples A13316 and A13317 are considered estimated.

In the continuing calibration of July 13, 1998, the percent difference (%D) exceeded the QC limits for aniline (32) and hexachlorocyclopentadiene (36). These compounds were not detected in any of the associated samples; the data are not affected.

In the continuing calibration of July 16, 1998, the percent difference (%D) exceeded the QC limits for N-nitrosodimethylamine (27) and 2,4-dimethylphenol (26). These compounds were not detected in the associated method blank and QC samples; the data are not affected.

One surrogate recovery was outside the QC limits for each of the following: A13316, A13317, Laboratory Control Sample Duplicate, and Method Blank. The data are not affected.

Data Package H328 — Pesticides/PCBs in Oil

In the initial calibration of July 14, 1998, the percent relative standard deviation (%RSD) for δ-BHC on the primary column (23) exceeded the QC limit. This compound was not detected in the sample; the data are not affected.

In the initial calibration of June 5, 1998, the percent relative standard deviation (%RSD) for chlordane, peak 3 (29), peak 4 (24), and peak 5 (30) exceeded the QC limit. The data are not affected because this compound was not detected in the sample.

In the continuing calibration of July 16, 1998 (0716F.022), the %D for Endosulfan II (16) exceeded the QC limit. The data are not affected because this compound was not detected in the sample.

In the continuing calibration of July 16, 1998 (0716F.034), the %D for Endosulfan II (22) exceeded the QC limit. The data are not affected because this compound was not detected in the sample.

No continuing calibrations were reported for Aroclor 1248 (beginning and end). Concentrations of Aroclor 1248 in samples A13316 and A13317 are considered estimated.

No continuing calibrations were reported for Aroclor 1254 (end). Concentrations of Aroclor 1254 in samples A13316 and A13317 are considered estimated.

Each of the following samples and spikes had one surrogate recovery outside QC limits: A13316, BLK-MS, and BLK-MSD. The data are not affected.

Summary of Abbreviations

AA	Atomic Absorption				
B	The analyte was found in the blank				
BFB	Bromofluorobenzene				
BPQL	Below the Practical Quantitation Limit				
BS	Blank Spike				
BSD	Blank Spike Duplicate				
C	Centigrade				
D	(Surrogate and MS/MSD Table) this value is from a diluted sample and was not calculated (Result Table) this result was obtained from a diluted sample				
Dioxin	Denotes Polychlorinated Dibenz-p-dioxins and Polychlorinated Dibenzofurans and/or PCDD and PCDF				
CLP	Contract Laboratory Protocol				
COC	Chain of Custody				
CONC	Concentration				
CRDL	Contract Required Detection Limit				
CRQL	Contract Required Quantitation Limit				
DFTPP	Decafluorotriphenylphosphine				
DL	Detection Limit				
E	The value is greater than the highest linear standard and is estimated				
EMPC	Estimated maximum possible concentration				
ICAP	Inductively Coupled Argon Plasma				
ISTD	Internal Standard				
J	The value is below the method detection limit and is estimated				
LCS	Laboratory Control Sample				
LCSD	Laboratory Control Sample Duplicate				
MDL	Method Detection Limit				
MI	Matrix Interference				
MS	Matrix Spike				
MSD	Matrix Spike Duplicate				
MW	Molecular Weight				
NA	either Not Applicable or Not Available				
NC	Not Calculated				
NR	Not Requested				
NS	Not Spiked				
% D	Percent Difference				
% REC	Percent Recovery				
PQL	Practical Quantitation Limit				
PPBV	Parts per billion by volume				
QL	Quantitation Limit				
RPD	Relative Percent Difference				
RSD	Relative Standard Deviation				
SIM	Selected Ion Mode				
TCLP	Toxic Characteristics Leaching Procedure				
U	Denotes not detected				
W	Weathered analyte; the value should be regarded as estimated				
m ³	cubic meter	kg	kilogram	µg	microgram
L	liter	g	gram	pg	picogram
mL	milliliter	mg	milligram		
µL	microliter				
*	denotes a value that exceeds the acceptable QC limit				
	Abbreviations that are specific to a particular table are explained in footnotes on that table				
	Revision 10/16/97				

Analytical Procedure for VOC in Oil

The subcontract laboratory prepared the samples using SW846 method 5035 and analyzed the sample using SW846 method 8260B. The VOC results are listed in Table 1.1.

Analytical Procedure for BNA in Oil

The subcontract laboratory prepared the samples using SW846 method 3580A and analyzed the sample using SW846 method 8270C. The BNA results are listed in Table 1.2.

Analytical Procedure for Pesticides/PCBs in Oil

The subcontract laboratory prepared the samples using SW846 method 3580A and analyzed the sample using SW846 method 8080A. The pesticide/PCB results are listed in Table 1.3.

Table 1.1 Results of the Analysis for VOC in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No. Sample Location Matrix Dilution Factor	Method Blank		A13316 EX-1 Barrel 1		A13317 EX-2 Composite	
	Oil 1		Oil 250		Oil 500	
	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Dichlorodifluoromethane (CFC 12)	U	0.05	U	12	U	25
Chloromethane	U	0.05	U	12	U	25
Vinyl Chloride	U	0.05	U	12	U	25
Bromomethane	U	0.05	U	12	U	25
Chloroethane	U	0.05	U	12	U	25
Trichlorofluoromethane (CFC 11)	U	0.05	U	12	U	25
Acetone	U	2	U	500	U	1000
1,1-Dichloroethene (1,1-DCE)	U	0.05	U	12	U	25
Carbon Disulfide	U	0.05	U	12	U	25
Methylene Chloride	U	0.1	U	25	U	50
trans-1,2-Dichloroethene	U	0.05	U	12	U	25
1,1-Dichloroethane (1,1-DCA)	U	0.05	U	12	U	25
2-Butanone (MEK)	U	2	U	500	U	1000
2,2-Dichloropropane	U	0.05	U	12	U	25
cis-1,2-Dichloroethene	U	0.05	U	12	34	25
Chloroform	U	0.05	U	12	U	25
Bromochloromethane	U	0.05	U	12	U	25
1,1,1-Trichloroethane (TCA)	U	0.05	U	12	U	25
1,1-Dichloropropene	U	0.05	U	12	U	25
Carbon Tetrachloride	U	0.05	U	12	U	25
1,2-Dichloroethane (EDC)	U	0.05	U	12	U	25
Benzene	U	0.05	U	12	28	25
Trichloroethene (TCE)	U	0.05	U	12	58	25
1,2-Dichloropropane	U	0.05	U	12	U	25
Bromodichloromethane	U	0.05	U	12	U	25
Dibromomethane	U	0.05	U	12	U	25
2-Hexanone	U	2	U	500	U	1000
cis-1,3-Dichloropropene	U	0.05	U	12	U	25
Toluene	U	0.05	98	12	310	25
trans-1,3-Dichloropropene	U	0.05	U	12	U	25
1,1,2-Trichloroethane	U	0.05	U	12	U	25
4-Methyl-2-pentanone (MIBK)	U	2	U	500	U	1000
1,3-Dichloropropane	U	0.05	U	12	U	25

Table 1.1 (cont.) Results of the Analysis for VOC in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No. Sample Location Matrix Dilution Factor	Method Blank		A13316 EX-1 Barrel 1		A13317 EX-2 Composite	
	Oil 1		Oil 250		Oil 500	
	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Tetrachloroethene (PCE)	U	0.05	U	12	U	25
Dibromochloromethane	U	0.05	U	12	U	25
1,2-Dibromoethane (EDB)	U	0.2	U	50	U	100
Chlorobenzene	U	0.05	U	12	U	25
1,1,1,2-Tetrachloroethane	U	0.05	U	12	U	25
Ethylbenzene	U	0.05	71	12	180	25
Xylenes, Total	U	0.05	230	12	1300	25
Styrene	U	0.05	U	12	U	25
Bromoform	U	0.05	U	12	U	25
Isopropylbenzene (Cumene)	U	0.2	U	50	U	100
1,1,2,2-Tetrachloroethane	U	0.05	U	12	U	25
1,2,3-Trichloropropane	U	0.05	U	12	U	25
Bromobenzene	U	0.05	U	12	U	25
n-Propylbenzene	U	0.2	78	50	U	100
2-Chlorotoluene	U	0.2	U	50	U	100
4-Chlorotoluene	U	0.2	U	50	U	100
1,3,5-Trimethylbenzene	U	0.2	250	50	210	100
tert-Butylbenzene	U	0.2	U	50	U	100
1,2,4-Trimethylbenzene	U	0.2	670	50	650	100
sec-Butylbenzene	U	0.2	57	50	U	100
1,3-Dichlorobenzene	U	0.05	U	12	U	25
4-Isopropyltoluene	U	0.2	90	50	U	100
1,4-Dichlorobenzene	U	0.05	29	12	U	25
n-Butylbenzene	U	0.2	U	50	140	100
1,2-Dichlorobenzene	U	0.05	82	12	200	25
1,2-Dibromo-3-chloropropane (DBCP)	U	1.3	U	330	U	670
1,2,4-Trichlorobenzene	U	0.2	U	50	180	100
1,2,3-Trichlorobenzene	U	0.2	U	50	U	100
Naphthalene	U	0.2	770	50	710	100
Hexachlorobutadiene	U	0.2	U	50	U	100

Table 1.2 Results of the Analysis for BNA in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No.	Method Blank		A13316		A13317	
	NA	EX-1 Barrel 1	Oil	EX-2 Composite	Oil	
Sample Location	Oil		5.0		5.0	
Matrix	1.0					
Dilution Factor						
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
N-Nitrosodimethylamine	U	250	U	1300	U	1300
Aniline	U	130	U	630	U	630
Bis(2-chloroethyl) Ether	U	50	U	250	U	250
Phenol	U	50	U	250	U	250
2-Chlorophenol	U	50	U	250	U	250
1,3-Dichlorobenzene	U	50	U	250	U	250
1,2-Dichlorobenzene	U	50	87	J	230	J
1,4-Dichlorobenzene	U	50	U	250	100	J
Benzyl Alcohol	U	50	U	250	U	250
Bis(2-chloroisopropyl) Ether	U	50	U	250	U	250
2-Methylphenol	U	50	U	250	U	250
Hexachloroethane	U	50	U	250	U	250
N-Nitrosodi-n-propylamine	U	50	U	250	U	250
3- and 4-Methylphenol Coelution	U	50	U	250	U	250
Nitrobenzene	U	50	U	250	U	250
Isophorone	U	50	U	250	U	250
2-Nitrophenol	U	50	U	250	U	250
2,4-Dimethylphenol	U	50	U	250	U	250
Bis(2-chloroethoxy)methane	U	50	U	250	U	250
2,4-Dichlorophenol	U	100	U	500	U	500
Benzoic Acid	U	250	U	1300	U	1300
1,2,4-Trichlorobenzene	U	50	U	250	210	J
Naphthalene	U	50	780	250	560	250
4-Chloroaniline	U	50	U	250	U	250
Hexachlorobutadiene	U	50	U	250	U	250
4-Chloro-3-methylphenol	U	50	U	250	U	250
2-Methylnaphthalene	U	50	1900	250	1900	250
Hexachlorocyclopentadiene	U	50	U	250	U	250
2,4,6-Trichlorophenol	U	50	U	250	U	250
2,4,5-Trichlorophenol	U	50	U	250	U	250
2-Chloronaphthalene	U	50	U	250	U	250
2-Nitroaniline	U	250	U	1300	U	1300
Acenaphthylene	U	50	U	250	U	250
Dimethyl Phthalate	U	50	U	250	U	250

Table 1.2 (cont.) Results of the Analysis for BNA in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No.	Method Blank		A13316		A13317	
	Sample Location	NA	EX-1 Barrel 1		EX-2 Composite	
		Oil	Oil	Oil	Oil	Oil
Dilution Factor	1.0		5.0		5.0	
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
2,6-Dinitrotoluene	U	50	U	250	U	250
Acenaphthene	U	50	U	250	U	250
3-Nitroaniline	U	250	U	1300	U	1300
2,4-Dinitrophenol	U	250	U	1300	U	1300
Dibenzofuran	U	50	U	250	110	J
4-Nitrophenol	U	250	U	1300	U	1300
2,4-Dinitrotoluene	U	50	U	250	U	250
Fluorene	U	50	210	J	250	320
4-Nitroaniline	U	250	U	1300	U	1300
2-Methyl-4,6-dinitrophenol	U	250	U	1300	U	1300
N-Nitrosodiphenylamine	U	50	U	250	U	250
4-Bromophenyl Phenyl Ether	U	50	U	250	U	250
Hexachlorobenzene	U	50	U	250	U	250
Pentachlorophenol (PCP)	U	250	U	1300	U	1300
Phenanthrene	U	50	420	250	650	250
Anthracene	U	50	U	250	570	250
Di-n-butyl Phthalate	U	50	U	250	37	J
Fluoranthene	U	50	70	J	250	210
Pyrene	U	50	94	J	250	230
Butyl Benzyl Phthalate	U	50	410	250	120	J
3,3'-Dichlorobenzidine	U	250	U	1300	U	1300
Benz(a)anthracene	U	50	48	J	250	67
Chrysene	U	50	80	J	250	140
Bis(2-ethylhexyl) Phthalate	U	50	630	250	1000	250
Di-n-octyl Phthalate	U	50	U	250	U	250
Benzo(b)fluoranthene	U	50	U	250	U	250
Benzo(k)fluoranthene	U	50	U	250	U	250
Benzo(a)pyrene	U	50	U	250	U	250
Indeno(1,2,3-cd)pyrene	U	50	U	250	U	250
Dibenz(a,h)anthracene	U	50	U	250	U	250
Benzo(g,h,i)perylene	U	50	U	250	U	250
Carbazole	U	50	U	250	81	J

Table 1.3 Results of the Analysis for Pesticides/PCBs in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No. Sample Location Matrix	Method Blank			A13316 EX-1 Barrel 1 Oil			A13317 EX-2 Composite Oil		
	Oil			Conc. mg/kg	MDL mg/kg	Dilution Factor	Conc. mg/kg	MDL mg/kg	Dilution Factor
	Compound Name	Conc. mg/kg	MDL mg/kg						
alpha-BHC	U	0.02	1	U	0.20	10	U	0.20	10
beta-BHC	U	0.02	1	U	0.20	10	U	0.20	10
gamma-BHC (Lindane)	U	0.02	1	U	0.20	10	U	0.20	10
delta-BHC	U	0.02	1	U	0.20	10	U	0.20	10
Heptachlor	U	0.02	1	U	0.20	10	U	0.20	10
Aldrin	U	0.02	1	U	0.20	10	U	0.20	10
Heptachlor Epoxide	U	0.02	1	U	0.20	10	U	0.20	10
Endosulfan I	U	0.02	1	U	0.20	10	U	0.20	10
Dieldrin	U	0.02	1	0.49	0.20	10	5.1	0.20	10
4,4'-DDE	U	0.02	1	0.68	0.20	10	3.2	0.20	10
Endrin	U	0.02	1	U	0.20	10	U	0.20	10
Endosulfan II	U	0.02	1	U	0.20	10	U	0.20	10
4,4'-DDD	U	0.02	1	U	0.20	10	U	0.20	10
Endrin Aldehyde	U	0.02	1	U	0.20	10	U	0.20	10
Endosulfan Sulfate	U	0.02	1	U	0.20	10	U	0.20	10
4,4'-DDT	U	0.02	1	U	0.20	10	7.3	0.20	10
Methoxychlor	U	0.02	1	U	0.20	10	1.0	0.20	10
Toxaphene	U	2	1	U	2	1	U	20	10
Chlordane	U	1	1	U	1	1	U	10	10
Aroclor 1016	U	1	1	U	1	1	U	10	10
Aroclor 1221	U	1	1	U	1	1	U	10	10
Aroclor 1232	U	1	1	U	1	1	U	10	10
Aroclor 1242	U	1	1	U	1	1	U	10	10
Aroclor 1248	U	1	1	7.2	1	1	190	10	10
Aroclor 1254	U	1	1	11	1	1	130	10	10
Aroclor 1260	U	1	1	4.6	1	1	310	10	10

QA/QC for VOC

Results of the Surrogate Recoveries for VOC in Oil

Prior to extraction, each sample was spiked with a three-component surrogate mixture consisting of dibromofluoromethane, toluene-d₈, and 4-bromofluorobenzene. The surrogate percent recoveries, listed in Table 2.1, ranged from 91 to 102. All 24 percent recoveries are within acceptable QC limits.

Results of the MS/MSD Analysis for VOC in Oil

Sample A13316 was used for the MS/MSD analysis. Percent recoveries, listed in Table 2.2, ranged from 93 to 118. All 12 of the calculated percent recoveries are within acceptable QC limits. The percent recovery for naphthalene was not calculated in either the MS or the MSD because the analyte concentration in the sample was significantly higher than the spike concentration. The relative percent differences (RPDs), also listed in Table 2.2, ranged from 0 (zero) to 6. QC limits were not available for the RPDs.

Results of the LCS/LCSD Analysis for VOC in Oil

Percent recoveries for the LCS/LCSD analysis, listed in Table 2.3, ranged from 88 to 120. All 14 of the percent recoveries are within acceptable QC limits. The relative percent differences (RPDs), also listed in Table 2.3, ranged from 0 (zero) to 14. QC limits were not available for the RPDs.

Table 2.1 Results of the Surrogate Recoveries for VOC in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No.	Surrogate Compound	Dilution Factor	% Rec.	QC Limits
A13316	Dibromofluoromethane	250	92	75-132
A13316	Toluene-d8	250	101	85-109
A13316	4-Bromofluorobenzene	250	95	49-131
A13317	Dibromofluoromethane	500	92	75-132
A13317	Toluene-d8	500	99	85-109
A13317	4-Bromofluorobenzene	500	95	49-131
A13316 MS	Dibromofluoromethane	250	100	75-132
A13316 MS	Toluene-d8	250	100	85-109
A13316 MS	4-Bromofluorobenzene	250	99	49-131
A13316 MSD	Dibromofluoromethane	250	98	75-132
A13316 MSD	Toluene-d8	250	98	85-109
A13316 MSD	4-Bromofluorobenzene	250	98	49-131
Lab Control Sample	Dibromofluoromethane	1	99	75-132
Lab Control Sample	Toluene-d8	1	102	85-109
Lab Control Sample	4-Bromofluorobenzene	1	100	49-131
Lab Control Sample	Dibromofluoromethane	1	98	75-132
Lab Control Sample	Toluene-d8	1	100	85-109
Lab Control Sample	4-Bromofluorobenzene	1	100	49-131
Method Blank, (07/14/98)	Dibromofluoromethane	1	95	75-132
Method Blank, (07/14/98)	Toluene-d8	1	100	85-109
Method Blank, (07/14/98)	4-Bromofluorobenzene	1	91	49-131
Method Blank, (07/17/98)	Dibromofluoromethane	1	95	75-132
Method Blank, (07/17/98)	Toluene-d8	1	96	85-109
Method Blank, (07/17/98)	4-Bromofluorobenzene	1	94	49-131

Table 2.2 Results of the MS/MSD Analysis for VOC in Oil

WA# 3-304 Waste Disposal, Inc.

Sample ID: A13316
 Matrix: Oil

Spike Compound	Dilution Factor	Certified Value MS mg/kg	Certified Value MSD mg/kg	MS Conc. mg/kg	MSD Conc. mg/kg	MS % Rec.	MSD % Rec.	RPD	QC Limits % Rec.
1,1-Dichloroethene (1,1-DCE)	250	280	280	330	310	118	111	6	51-127
Benzene	250	280	280	280	280	100	100	0	57-121
Trichloroethene (TCE)	250	280	280	280	270	100	96	4	45-127
Toluene	250	280	280	360	370	94	97	3	34-134
Chlorobenzene	250	280	280	270	260	96	93	4	37-126
1,2-Dichlorobenzene	250	280	280	360	360	99	99	0	34-131
Naphthalene	250	280	280	NA	NA	NA	NA	NA	20-139

Table 2.3 Results of the LCS/LCSD Analysis for VOC in Water
WA# 3-304 Waste Disposal, Inc.

Sample ID: Laboratory Control Sample
 Matrix: Water

Spike Compound	Dilution Factor	Certified Value	LCS	LCSD	LCS	LCSD	LCSD	QC Limits
		μg/L	μg/L	Conc. μg/L	Conc. μg/L	% Rec.	% Rec.	% Rec.
1,1-Dichloroethene (1,1-DCE)	1	10	10	10	8.8	100	88	13
Benzene	1	10	10	10	9.5	100	95	5
Trichloroethene (TCE)	1	10	10	11	9.9	110	99	11
Toluene	1	10	10	11	9.6	110	96	14
Chlorobenzene	1	10	10	10	9.6	100	96	4
1,2-Dichlorobenzene	1	10	10	10	10	100	100	0
Naphthalene	1	10	10	12	12	120	120	0

QA/QC for BNA

Results of the Surrogate Recoveries for BNA in Oil

Prior to extraction, each sample was spiked with a six-component surrogate mixture consisting of 2-fluorophenol, phenol-d₅, nitrobenzene-d₅, 2-fluorobiphenyl, 2,4,6-tribromophenol, and terphenyl-d₁₄. The results of the surrogate recoveries are listed in Table 2.4. The surrogate percent recoveries ranged from 60 to 157. Twenty-six of 30 percent recoveries are within acceptable QC limits.

Results of the LCS/LCSD Analysis for BNA in Oil

Percent recoveries for the LCS/LCSD analysis, listed in Table 2.5, ranged from 81 to 114. All 22 percent recoveries were within acceptable QC limits. The relative percent differences (RPDs), also listed in Table 2.5, ranged from 0 (zero) to 15. QC limits were not available for the RPDs.

Table 2.4 Results of the Surrogate Recoveries for BNA in Oil

WA# 3-304 Waste Disposal, Inc.

Sample No.	Surrogate Compound	%Rec.	QC Limits
A13316	2-Fluorophenol	76	50-150
A13316	Phenol-d6	76	50-150
A13316	Nitrobenzene-d5	94	50-150
A13316	2-Fluorobiphenyl	123	50-150
A13316	2,4,6-Tribromophenol	74	50-150
A13316	p-Terphenyl-d14	154	*
A13317	2-Fluorophenol	77	50-150
A13317	Phenol-d6	79	50-150
A13317	Nitrobenzene-d5	103	50-150
A13317	2-Fluorobiphenyl	129	50-150
A13317	2,4,6-Tribromophenol	60	50-150
A13317	p-Terphenyl-d14	157	*
Lab Control Sample	2-Fluorophenol	106	50-150
Lab Control Sample	Phenol-d6	95	50-150
Lab Control Sample	Nitrobenzene-d5	117	50-150
Lab Control Sample	2-Fluorobiphenyl	127	50-150
Lab Control Sample	2,4,6-Tribromophenol	76	50-150
Lab Control Sample	p-Terphenyl-d14	143	50-150
Lab Control Sample	2-Fluorophenol	106	50-150
Lab Control Sample	Phenol-d6	94	50-150
Lab Control Sample	Nitrobenzene-d5	121	50-150
Lab Control Sample	2-Fluorobiphenyl	131	50-150
Lab Control Sample	2,4,6-Tribromophenol	80	50-150
Lab Control Sample	p-Terphenyl-d14	157	*
Method Blank	2-Fluorophenol	112	50-150
Method Blank	Phenol-d6	99	50-150
Method Blank	Nitrobenzene-d5	120	50-150
Method Blank	2-Fluorobiphenyl	132	50-150
Method Blank	2,4,6-Tribromophenol	75	50-150
Method Blank	p-Terphenyl-d14	152	*

Table 2.5 Results of the LCS/LCSD Analysis for BNA (Oil)

WA# 3-304 Waste Disposal, Inc.

Sample ID: Laboratory Control Sample

Compound Name	Certified Value LCS (mg/kg)	Certified Value LCSD (mg/kg)	LCS Conc. (mg/kg)	LCSD Conc. (mg/kg)	LCS % Rec.	LCSD % Rec.	RPD	QC Limits % Rec.
Phenol	652	728	543	616	83	84	1	50-150
2-Chlorophenol	652	728	602	676	92	93	1	50-150
1,4-Dichlorobenzene	435	485	409	486	93	100	7	50-150
N-Nitrosodi-n-propylamine	435	485	378	432	86	90	5	50-150
1,2,4-Trichlorobenzene	435	485	414	489	95	100	5	50-150
4-Chloro-3-methylphenol	652	728	586	654	89	89	0	50-150
Acenaphthene	435	485	503	471	114	98	15	50-150
4-Nitrophenol	652	728	593	626	90	85	6	50-150
2,4-Dinitrotoluene	435	485	383	421	88	86	2	50-150
Pentachlorophenol (PCP)	652	728	532	617	81	85	5	50-150
Pyrene	435	485	414	396	95	82	15	50-150

QA/QC for Pesticides/PCBs

Results of the Surrogate Recoveries for Pesticides/PCBs in Oil

Prior to extraction, each sample was spiked with a surrogate solution consisting of tetrachloro-m-xylene and decachlorobiphenyl. The results of the surrogate recoveries are listed in Table 2.5. The surrogate percent recoveries ranged from 48 to 84. Seven of ten percent recoveries were within the QC limits.

Results of the LCS/LCSD Analysis for Pesticides/PCBs in Oil

Percent recoveries for the laboratory control samples, listed in Table 2.6, ranged from 62 to 89. The relative percent differences (RPDs), also listed in Table 2.9, ranged from 8 to 11. No QC limits were given for the percent recoveries or the RPDs.

Table 2.6 Results of the Surrogate Recoveries for Pesticides/PCBs in Oil

WA# 3-304 Waste Disposal, Inc.

Analysis Date: 07/17/98

Matrix: Oil

Sample No.	Surrogate Compound	Dilution Factor	%Rec.	QC Limits
A13316	Tetrachloro-m-xylene	1	48	*
A13316	Decachlorobiphenyl	1	60	60-150
A13317	Tetrachloro-m-xylene	10	64	60-150
A13317	Decachlorobiphenyl	10	84	60-150
Lab Control Sample	Tetrachloro-m-xylene	1	73	60-150
Lab Control Sample	Decachlorobiphenyl	1	52	*
Lab Control Sample Dup.	Tetrachloro-m-xylene	1	76	60-150
Lab Control Sample Dup.	Decachlorobiphenyl	1	56	*
Method Blank	Tetrachloro-m-xylene	1	77	60-150
Method Blank	Decachlorobiphenyl	1	61	60-150

Table 2.7 Results of the LCS/LCSD Analysis for Pesticides/PCBs (Oil)**WA# 3-304 Waste Disposal, Inc.****Sample ID: Laboratory Control Sample**

Compound Name	Certified Value LCS (mg/kg)	LCS LCSD (mg/kg)	LCS Conc. (mg/kg)	LCSD Conc. (mg/kg)	LCS % Rec.	LCSD % Rec.	RPD
gamma-BHC (Lindane)	1.0	1.0	0.89	0.82	89	82	8
Heptachlor	1.0	1.0	0.81	0.75	81	75	8
Aldrin	1.0	1.0	0.77	0.70	77	70	10
Dieldrin	1.0	1.0	0.68	0.62	68	62	9
Endrin	1.0	1.0	0.69	0.63	69	63	9
4,4'-DDT	1.0	1.0	0.70	0.63	70	63	11



Roy F. Weston, Inc.
GSA Renter Depot
Bldg. 209 Annex (Bay F)
2690 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

Columbia Analytical Services, Inc.
PO Box 479, 1317 South 13th Ave
Keslo, Washington, 98626

Attn: Teena Jones

30 June 1998

Project # 3347-143-001-3304 Waste Disposal Inc.

As per Weston REAC Purchase Order number 94476, please analyze samples according to the following parameters:

Analysis/Method	Matrix	# of samples
VOA/ SW-846-5035/ 8260A *	Organic Liquid	2
BNA/ SW-846-8270B *	Organic Liquid	2
Pest/PCB/ SW-846-8080 *	Organic Liquid	2
Data package: See attached Deliverables Requirements plus diskette deliverable.		

* See attached compound list

Samples are expected to arrive at your laboratory on July 1, 1998. All applicable QA/QC analysis as per method, will be performed on our sample matrix. Preliminary sample result tables plus a signed copy of our Chain of Custody must be faxed to REAC 10 business days after receipt of the last samples. The complete data package is due 21 business days after receipt of last batch of samples. The complete data package must include all items on the deliverables checklist.

Please submit all reports and technical questions concerning this project to John Johnson at (732) 321-4248 or fax to (732) 321-4392. Any contractual question, please call Cynthia Lentini at (732) 321-4296.

Sincerely,

for Misty Barkley

Data Validation and Report Writing Group Leader
Roy F. Weston, Inc. / REAC Project

MB:jj Attachments

cc. R. Singhvi
 B. Coakley
 3304\non\mem\9806\sub\3304Con

V. Kansal
Subcontracting File
C. Gasser

C. Lentini
E. McGovern
M. Barkley

00020



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

August 3, 1998

Teena Jones
Columbia Analytical Services
1317 South 13th Avenue
Kelsa, Washington 98626

RE: Project # 03347-143-001-3304 Waste Disposal Inc.
CAS Request No. K9804274

Dear Teena:

In our review of the above data packages, we are requesting clarification on the following:

1.) For the following initial calibration data files, the concentrations on the analytical runlog do not match the corresponding quant reports: 0713F010, 0713F011 & 0713F012. Please Comment.

If you have any questions on any of the above request, you may reach Ray Varzolona at (732) 494-4054.

Thank you,

Misty Barkley
Data Validation/Report Writing Group Leader
REAC/Roy F. Weston

00021

Waste Oil Validation Questions - Pesticides/PCBs

- Heptachlor in the Method Blank - the values on both columns are below the MRL of 20 ppb, therefore it is ND. OK
- We reviewed the PCB pattern matches in both samples 1&2 and believe the peaks appearing as AR1242 are part of the AR1243 pattern. Any time there are multiple PCBs in a sample, making the correct ID becomes very complex and difficult. Our analysts' use electronic overlays to match the best PCB pattern with the sample and quantitate accordingly. We seldom ID more than 3 PCBs in one sample because it just becomes too questionable. OK
- The PCB MRLs on the report forms are not a 'straight' calculation, which is why you couldn't really duplicate our number. These are based on the historical data we have on these Waste Oils. We probably could have put the PCBs at 0.5 ppm based on a 50 ug/ml low standard x 10 mL final volume / 1g oil, but we chose to use 1 ppm since we have had to dilute most all of these samples anyway.
- It is our understanding that for EPA Method 8080A one column is used as confirmation only and it does not specify that it has to be the same column all the time. It is our practice to quantitate from the column that is +/- 15% based on the preceding CCV, or to report the lower value if they are both in spec, or to report from the column the analyst knows to be the most stable and have the least interference. For Update III, Method 8081, some of these criteria change, but we are citing 8080 from Update II. This is at least the third set of Waste Oil samples we have done and no one has requested CCV reports for both analytical columns. All the raw data is there so essentially you have all the recoveries.

Let me know if you need any more information.

EAC - J

(908) 321-4200

EPA Contract 68-C4-0022

Project Number: 03347143 001 3304 01
RFW Contact: NEWHART Phone: 623-321-4214

四·三·四

三

୪୩

No: 05432

Sample Identification

Analyses Requested

三

SD - Sediment
DS - Drum Solids
DL - Drum Liquids
X - Other

PW - Potable Water
GW - Groundwater
SW - Surface Water
SI - Studies

S - Soil
W - Water
O - Oil
A - Air

Special Instructions:

QA Standard 6.30.98

FOR SUBCONTRACTING USE ONLY

**FROM CHAIN OF
CUSTODY #**

Appendix C

APPENDIX C
FINAL ANALYTICAL REPORT
PIEZOMETERS AND BAKER TANKS - ORGANIC LIQUIDS
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CALIFORNIA
MAY 1999

LM\FR\00085



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

DATE: 19 October 1998

TO: R. Singhvi **EPA/ERTC**
FROM: V. Kansal **Analytical Section Leader** *Vinod Kansal*
SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 3-304

Attached please find the following document prepared under this work assignment:

Waste Disposal, Inc.

Central File WA # 3-304
B. Coakley
G. Newhart
M. Barkley

(w/attachment)
Work Assignment Manager (w/attachment)
Task Leader (w/attachment)
Data Validation and Report Writing
Group Leader (w/o attachment)

3304\DEL\AR\9810\WASTEDISPAR



ANALYTICAL REPORT

Prepared by
Roy F. Weston, Inc.

Waste Disposal, Inc.
Santa Fe Springs, CA

October 1998

EPA Work Assignment No. 3-304
WESTON Work Order No. 03347-143-001-3304-01
EPA Contract No. 68-C4-0022

Submitted to
B. Coakley
EPA-ERTC

G. Newhart 10/19/98
G. Newhart Date
Task Leader

V. Kansal 10/19/98
V. Kansal Date
Analytical Section Leader

E. Gilardi 10/19/98
E. Gilardi Date
Program Manager

Analysis by:
REAC

Prepared by:
M. Bernick

Reviewed by:
M. Barkley

Table of Contents

<u>Topic</u>	<u>Page Number</u>
Introduction	Page 1
Case Narrative	Page 1
Summary of Abbreviations	Page 4
 Section I	
Analytical Procedure for BNA in Liquid Organic Waste	Page 5
Analytical Procedure for Pesticide/PCB in Liquid Organic Waste	Page 7
Analytical Procedure for Pesticide/PCB in Liquid Organic Waste (Sample 3304-0047)	Page 9
Analytical Procedure for BNA in Water	Page 11
Analytical Procedure for Metals in Soil	Page 13
Analytical Procedure for Pesticide/PCB in Water	Page 14
Results of the Analysis for BNA in Liquid Organic Waste	Table 1.1 Page 16
Results of the Analysis for TIC for BNA in Liquid Organic Waste	Table 1.2 Page 21
Results of the Analysis for Pesticide/PCB in Liquid Organic Waste	Table 1.3 Page 40
Results of the Analysis for BNA in Water	Table 1.4 Page 45
Results of the Analysis for TIC for BNA in Water	Table 1.5 Page 49
Results of the Analysis for Metals in Soil	Table 1.6 Page 63
Results of the Analysis for Pesticide/PCB in Water	Table 1.7 Page 65
 Section II	
QA/QC for BNA	Page 66
Results of the Internal Standard Areas for BNA in Liquid Organic Waste	Table 2.1 Page 67
Results of the Internal Standard Areas for BNA in Water	Table 2.2 Page 70
Results of the Surrogate Recoveries for BNA in Water	Table 2.3 Page 74
Results of the BS/BSD Analysis for BNA in Water	Table 2.4 Page 78
QA/QC for Metals	Page 80
Results of the QC Standard Analysis for Metals (Soil)	Table 2.5 Page 81
Results of the MS/MSD Analysis for Metals in Soil	Table 2.6 Page 82
Results of the Blank Spike Analysis for Metals in Soil	Table 2.7 Page 83
QA/QC for Pesticide/PCB	Page 84
Results of the Surrogate Recoveries for Pesticide/PCB in Water	Table 2.8 Page 85
Results of the BS/BSD Analysis for Pesticide/PCB in Water	Table 2.9 Page 86
 Section III	
Chains of Custody	Page 87
Appendix A Data for Pesticides/PCBs-Liquid Organic Waste & Water	Page H 443 001
Appendix B Data for BNA-Water & Liquid Organic Waste	Page H 425 001
Appendix C Data for Pesticides/PCBs-Liquid Organic Waste	Page H 426 001
Appendix D Data for Metals	Page H 428 001
Appendix E Data for BNA-Water	Page H 402 001
Appendix F Data for BNA-Liquid Organic Waste	Page H 404 001

Appendices will be furnished on request.

Introduction

REAC in response to WA 3-304, provided analytical support for environmental samples collected from Waste Disposal, Inc., located in Santa Fe Springs, CA as described in the following table. The support also included QA/QC, data review, and preparation of an analytical report containing a summary of the analytical methods, the results, and the QA/QC results.

The samples were treated with procedures consistent with those specified in SOP #1008.

Chain of Custody	Number of Samples	Sampling Date	Date Received	Matrix	Analysis	Laboratory
3304-130898-0001	8	8/13/98	8/17/98	Liquid Organic Waste	BNA, Pest/PCB	REAC
3304-130898-0001-A	8					
3304-170898-0003	1	8/19/98	9/10/98	Oil		
	1			Water		
3304-210898-0009	4	8/20/98	8/24/98		BNA	
	7	8/21/98				
05832	9	9/10/98	9/11/98	Soil	TAL Metals	

Case Narrative

BNA Package H404-Liquid Organic Waste

Surrogates were not required nor added to Liquid Organic Waste samples: 3304-0001, 3304-002, 3304-0003, 3304-0004, 3304-0009, 3304-0013, 3304-0014, 3304-0015, 3304-0026, 3304-0027, 3304-0028, 3304-0037, 3304-0039, 3304-40, 3304-0044, 3304-0045; all results are considered estimated.

In the continuing calibration of 8/20/98 the percent difference for di-n-octylphthalate (36%), indeno-(1,2,3-cd)pyrene (25.3%), and dibenzo(a,h)anthracene (27%) exceeded the QC limits. These compounds were not detected in the associated samples; the data are not affected.

In the continuing calibration of 8/21/98 the percent difference for di-n-octylphthalate (49%), benzo(b)fluoroanthene (31%), and dibenzo(a,h)anthracene (25.2%) exceeded the QC limits. These compounds were not detected in the associated samples; the data are not affected.

BNA Package H402-Water

Method blank WBLK08269801 contained bis(2-ethylhexyl)phthalate (97 µg/L). The bis(2-ethylhexyl)phthalate concentrations reported for samples 3304-0052 and 3304-0054 were less than ten times the method blank concentration; the results are considered not detected.

In the continuing calibration of 8/31/98 the percent difference for di-n-octyl phthalate (30%), indeno-(1,2,3-cd)pyrene (32%), benzo(g,h,i)perylene (30%) and dibenzo(a,h)anthracene (32%) exceeded the QC limits. These compounds were not detected in the associated samples; the data are not affected.

In the continuing calibration of 9/1/98 the percent difference for pentachlorophenol (27%), bis(2-ethylhexyl)phthalate (33%), di-n-octyl phthalate (49%), indeno-(1,2,3-cd)pyrene (26%), benzo(g,h,i)perylene (26%) and dibenz(a,h)anthracene (37%) exceeded the QC limits. These compounds were not detected in the associated samples; the data are not affected.

Sample 3304-0050 had one base-neutral surrogate exceed the QC limits; the data are not affected.

All surrogates were diluted out for samples 3304-0056 and 3304-0058; all results are considered estimated.

Pesticide/PCB Package H426-Liquid Organic Waste

Surrogates were not required nor added to Liquid Organic Waste samples: 3304-0001, 3304-002, 3304-0003, 3304-0004, 3304-0009, 3304-0013, 3304-0014, 3304-0015, 3304-0026, 3304-0027, 3304-0028, 3304-0037, 3304-0039, 3304-0040, 3304-0044, 3304-0045; all results are considered estimated.

In the initial calibration of 8/20/98 the percent relative percent difference for b-BHC (29) exceeded the QC limits. This compound was not detected in the associated samples; the data are not affected.

In the end of sequence calibration check of 9/5/98 the percent difference for p,p'-DDD (69%), p,p'-DDT (89%), endrin aldehyde (43%), endosulfan sulfate (34%), methoxychlor (200%) and endrin ketone (85%) exceeded the QC limits. No samples were quantitated using this calibration, the data are not affected.

In the end of sequence calibration check of 9/18/98 the percent difference for aroclor 1248 (53%) and aroclor 1260 (69%) exceeded the QC limits. No samples were quantitated using this calibration, the data are not affected.

The presence of aroclors 1248 and 1260 in all samples interferes with the identification of low levels of pesticides which may be present in the samples.

The following samples may contain low levels of aroclor 1254: 3304-0001, 3304-0002, 3304-0003, 3304-0013, 3304-0014, 3304-0026, 3304-0037, 3304-0040, 3304-0044, and 3304-0045. Aroclor 1254 was not quantitated for these samples due to the presence of higher concentrations of aroclors 1248 and 1260.

Pesticide/PCB Package H443-Liquid Organic Waste and Water

Initially, the samples were misplaced in the REAC sample cooler. When the samples were located they were submitted to the lab for analysis after they exceeded the holding time criteria. Water sample 3304-0046 was extracted 16 days and liquid organic waste sample 3304-0047 was diluted 19 days outside the holding time criteria. All detected results for water sample 3304-0046 and liquid organic waste sample 3304-0047 are considered estimated. All non-detected results for these samples are considered unusable.

A solvent blank was not prepared and analyzed with liquid organic waste sample 3304-0047.

No endrin ketone was in the resolution check mixture.

Two different calibration runs (one run for column A and a different run for column B) were used for the third pesticide calibration run for the retention time window standard deviation determination.

No aroclor fingerprint chromatographs were produced for the PCB quantitation analysis performed after the sample had undergone acid cleanup.

In the end of sequence calibration check of 9/29/98 the percent difference for g-BHC (25%), b-BHC (30%), p,p'-DDT (83%), endrin aldehyde (43%), methoxychlor (74%), DCBP (50%) and endrin ketone (50%) exceeded the QC limits. No samples were quantitated using this calibration, the data are not affected.

Both surrogates for water sample 3304-0046 exceeded the QC limits and surrogates were not required nor added to liquid organic waste sample 3304-0047. All results for both samples are considered estimated.

BNA Package H425-Liquid Organic Waste and Water

Initially, the samples were misplaced in the REAC sample cooler. When the samples were located they were submitted to the lab for analysis after exceeding the holding time criteria. Water sample 3304-0046 was extracted 19 days and liquid organic waste sample 3304-0047 was diluted 19 days outside the holding time criteria. All detected results for water sample 3304-0046 and liquid organic waste sample 3304-0047 are considered estimated. All non-detected results for these samples are considered unusable.

Surrogates were not required nor added to liquid organic waste sample 3304-0047; all results are considered estimated.

One base-neutral surrogate exceeded the QC limits for sample 3304-00046; the data are not affected

Summary of Abbreviations

AA	Atomic Absorption				
B	The analyte was found in the blank				
BFB	Bromofluorobenzene				
C	Centigrade				
D	(Surrogate Table) this value is from a diluted sample and was not calculated (Result Table) this result was obtained from a diluted sample				
Dioxin	denotes Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans and/or PCDD and PCDF				
CLP	Contract Laboratory Protocol				
COC	Chain of Custody				
CONC	Concentration				
CRDL	Contract Required Detection Limit				
CRQL	Contract Required Quantitation Limit				
DFTPP	Decafluorotriphenylphosphine				
DL	Detection Limit				
E	The value is greater than the highest linear standard and is estimated				
EMPC	Estimated maximum possible concentration				
ICAP	Inductively Coupled Argon Plasma				
ISTD	Internal Standard				
J	The value is below the method detection limit and is estimated				
LCS	Laboratory Control Sample				
LCSD	Laboratory Control Sample Duplicate				
MDL	Method Detection Limit				
MI	Matrix Interference				
MS	Matrix Spike				
MSD	Matrix Spike Duplicate				
MW	Molecular Weight				
NA	either Not Applicable or Not Available				
NC	Not Calculated				
NR	Not Requested				
NS	Not Spiked				
% D	Percent Difference				
% REC	Percent Recovery				
PQL	Practical Quantitation Limit				
PPBV	Parts per billion by volume				
QL	Quantitation Limit				
RPD	Relative Percent Difference				
RSD	Relative Standard Deviation				
SIM	Selected Ion Mode				
TCLP	Toxic Characteristics Leaching Procedure				
U	Denotes not detected				
W	Weathered analyte; the results should be regarded as estimated				
m³	cubic meter	kg	kilogram	μg	microgram
L	liter	g	gram	pg	picogram
mL	milliliter	mg	milligram		
μL	microliter				
*	denotes a value that exceeds the acceptable QC limit				

Abbreviations that are specific to a particular table are explained in footnotes on that table
Revision 7/9/98

Analytical Procedure for BNA in Liquid Organic Waste

Liquid Organic Waste Dilution Procedure

Liquid Organic Waste samples were prepared by weighing approximately 1 gram of sample and diluting to a final volume of 5 mLs of methylene chloride. An internal standard mixture consisting of 1,4-dichlorobenzene-d₄, naphthalene-d₄, acenaphthene-d₁₀, phenanthrene-d₁₀, chrysene-d₁₂, and perylene-d₁₂ was added. No surrogates were added to this dilution. These samples were screened on a GC/FID and diluted as required prior to GC/MS analysis. The results were calculated on an as received bases (decimal percent solids = 1.00).

Analysis Procedure

An HP 6890/5972 Gas Chromatograph/Mass Spectrometer (GC/MS), equipped with a 6890 autosampler and controlled by a PC computer equipped with Enviroquant software was used to analyze the samples.

The instrument conditions were:

Column	Restek Rtx-5 (crossbonded SE-54) 30 meter x 0.32mm ID, 0.50 µm film thickness
Injection Temperature	280° C
Transfer Temperature	280° C
Source Temperature & Analyzer Temperature	Controlled by thermal transfer of heat from transfer line
Temperature Program	60°C for 0.5 min 20° C/min to 295° C, hold for 8 min 25° C/min to 315° C, hold for 5 min
Pulsed Split Injection	Pressure pulse = 16 psi for 0.5 min, then normal
Injection Volume	1 µL Must use 4 mm ID single gooseneck liners packed with 10 mm pulg of silanized & conditioned glass wool.

The GC/MS system was calibrated using 5 BNA standard mixtures at 20, 50, 80, 120, and 160 µg/mL. Before analysis each day, the system was tuned with 50 ng decafluorotriphenylphosphine (DFTPP) passed a continuing calibration check when analyzing a 50 µg/mL standard mixture in which the responses were evaluated by comparison to the average response of the calibration curve.

BNA Liquid Organic Waste results are listed in Table 1.1; the tentatively identified compounds are listed in Table 1.2. The concentration of the detected compounds was calculated using the following equation:

$$C_u = \frac{DF \times A_u \times I_u \times V_i}{A_{is} \times RF (\text{ or } RF_{ave}) \times V_i \times W \times D}$$

where

C _u	= Concentration of target analyte (µg/kg)
DF	= Dilution Factor
A _u	= Area of target analyte
I _u	= Mass of specific internal standard (ng)
V _i	= Volume of extract (µl)
A _{is}	= Area of specific internal standard
RF	= Response Factor (unitless)
RF _{ave}	= average Response Factor
V _i	= Volume of extract injected (µl)
W	= Weight of sample (g)
D	= Decimal per cent solids (1.00 used for Liquid Organic Waste samples)

The RF_{ave} is used when a sample is associated with an initial calibration curve. The RF is used when a sample is associated with a continuing calibration.

Response Factor calculation:

The RF for each specific analyte is quantitated based on the area response from the continuing calibration check as follows:

$$RF = \frac{A_c \times I_{is}}{A_{is} \times I_c}$$

where

RF	= Response factor for a specific analyte
A _c	= Area of the analyte in the standard
I _{is}	= Mass of the specific internal standard
A _{is}	= Area of the specific internal standard

$$RF_{ave} = \frac{RF_1 + \dots + RF_n}{n}$$

I_c = Mass of the analyte in the standard

and

n = number of Samples

Revision of 10/01/98

Analytical Procedure for Pesticide/PCBs in Liquid Organic Waste

Liquid Organic Waste Dilution Procedure

Liquid Organic Waste samples were prepared by weighing a one gram aliquot and diluting to a final volume of 5 mL of hexane. No surrogates were added to the dilution. The results were calculated on an as received basis (decimal percent solids = 1.00).

Gas Chromatographic Analysis

The diluted samples were analyzed for pesticides and PCBs using simultaneous dual column injections. The analysis was done on an HP 5890 GC/ECD system, equipped with an HP 7673A automatic sampler, and controlled with an HP-CHEM STATION. The following conditions were employed:

First Column	DB-608, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Temperature Program	70°C for 1 minute 30°C/min to 150°C, 0.5min at 150°C 8°C/min to 275°C, 10min at 275°C
Second Column	RTX-CLPesticides, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Temperature Program	70°C for 1 minute 30°C/min to 150°C, 0.5min at 150°C 8°C/min to 275°C, 10min at 275°C
Injection Volume	2µL

The gas chromatographs were calibrated using 5 pesticide standards at 20, 50, 100, 200, and 500 µg/L. The results from each mixture were used to calculate the response factor (RF) of each analyte and the average Response Factor was used to calculate the concentration of pesticide in the sample. Quantification was based on the DB-608 column (signal 1) and the identity of the analyte was confirmed using the RTX-CLPesticides column (signal 2). A fingerprint chromatogram was run using each of the seven Aroclor mixtures and toxaphene; calibration curves were run only if a particular Aroclor or toxaphene was found in the sample.

The liquid organic waste results , listed in Table 1.3, are calculated by using the following formula:

$$C_u = \frac{DF \times A_u \times V_s}{RF_{ave} \times V_i \times W \times D}$$

where

C_u	= Concentration of analyte (mg/kg)
DF	= Dilution Factor
A_u	= Area or peak height
V_s	= Volume of sample (mL)
RF_{ave}	= Average response factor
V_i	= Volume of extract injected (μ L)
W	= Weight of sample (g)
D	= Decimal per cent solids (1.00 used for Liquid Organic Waste samples)

Response Factor calculation:

The RF for each specific analyte is quantitated based on the area response from the continuing calibration check as follows:

$$RF = \frac{A_u}{\text{total pg injected}}$$

where

A_u = Area or peak height

and

$$RF_{ave} = \frac{RF_1 + \dots + RF_n}{n}$$

where

n = number of samples

Revision 7/11/94

Analytical Procedure for Pesticide/PCBs in Liquid Organic Waste (Sample 3304-0047)

Liquid Organic Waste Dilution Procedure

Liquid Organic Waste samples were prepared by weighing a one gram aliquot and diluting to a final volume of 5 mL of hexane. No surrogates were added to the dilution. The results were calculated on an as received basis (decimal percent solids = 1.00).

Gas Chromatographic Analysis-PCB Quantitation

The diluted samples were analyzed for PCBs using simultaneous dual column injections. The analysis was done on an HP 5890 GC/ECD system, equipped with an HP 7673A automatic sampler, and controlled with an HP-CHEM STATION. The following conditions were employed:

First Column	DB-608, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Second Column	RTX-CLPesticides, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Temperature Program	70°C for 1 minute 30°C/min to 150°C, 0.5min at 150°C 8°C/min to 275°C, 10min at 275°C
Injection Volume	2µL

Gas Chromatographic Analysis-Pesticides and PCBs(screening)

The diluted samples were analyzed for pesticides and PCBs (screening) using simultaneous dual column injections. The analysis was done on an HP 6890 GC/ECD system, equipped with an HP 6890 automatic injector, and controlled with HP-CHEM STATION software. The following conditions were employed:

First Column	DB-608, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Second Column	RTX-CLPesticides, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Temperature Program	120°C for 1 minute 9°C/min to 285°C, 10 min at 285°C
Injection Volume	1µL

The gas chromatographs were calibrated using 5 pesticide standards at 20, 50, 100, 200, and 500 µg/L. The results from each mixture were used to calculate the response factor (RF) of each analyte and the average Response Factor was used to calculate the concentration of pesticide in the sample. Quantification was based on the DB-608 column (signal 1) and the identity of the analyte was confirmed using the RTX-CLPesticides column (signal 2). A fingerprint chromatogram was run using each of the seven Aroclor mixtures and toxaphene; calibration curves were run only if a particular Aroclor or toxaphene was found in the sample.

The liquid organic waste results , listed in Table 1.3, are calculated by using the following formula:

$$C_u = \frac{DF \times A_u \times V_t}{RF_{ave} \times V_i \times W \times D}$$

where

C_u	= Concentration of analyte (mg/kg)
DF	= Dilution Factor
A_u	= Area or peak height
V_t	= Volume of sample (mL)
RF_{ave}	= Average response factor
V_i	= Volume of extract injected (μ L)
W	= Weight of sample (g)
D	= Decimal per cent solids (1.00 used for Liquid Organic Waste samples)

Response Factor calculation:

The RF for each specific analyte is quantitated based on the area response from the continuing calibration check as follows:

$$RF = \frac{A_u}{\text{total pg injected}}$$

where

A_u = Area or peak height

and

$$RF_{ave} = \frac{RF_1 + \dots + RF_n}{n}$$

where

n = number of samples

Revision 10/14/98

Analytical Procedure for BNA in Water

Extraction Procedure

Prior to extraction, each sample was spiked with a six component surrogate mixture consisting of nitrobenzene-d₅, 2-fluorobiphenyl, terphenyl-d₁₄, phenol-d₅, 2-fluorophenol, and 2,4,6-tribromophenol. One liter of sample was extracted according to Method 625, Section 10, as outlined in the Federal Register Vol. 49, #209, Friday, Oct. 26, 1984. After the extracts were combined and concentrated to 1.0 mL, they were spiked with an internal standards mixture consisting of 1,4-dichlorobenzene-d₄, naphthalene-d₈, acenaphthene-d₁₀, phenanthrene-d₁₀, chrysene-d₁₂, and perylene-d₁₂. Following this preparation, the extracts were analyzed.

Analytical Procedure

An HP 6890/5972 Gas Chromatograph/Mass Spectrometer (GC/MS), equipped with a 6890 autosampler and controlled by a PC computer equipped with Enviroquant software was used to analyze the samples.

The instrument conditions were:

Column	Restek Rtx-5 (crossbonded SE-54) 30 meter x 0.32mm ID, 0.50 µm film thickness
Injection Temperature	280° C
Transfer Temperature	280° C
Source Temperature & Analyzer Temperature	Controlled by thermal transfer of heat from transfer line
Temperature Program	60°C for 0.5 min 20° C/min to 295° C, hold for 8 min 25° C/min to 315° C, hold for 5 min Pressure pulse = 16 psi for 0.5 min, then normal 1 µL
Pulsed Split Injection Injection Volume	Must use 4 mm ID single gooseneck liners packed with 10 mm pulg of silanized & conditioned glass wool.

The GC/MS system was calibrated using 5 BNA standards at 20, 50, 80, 120, and 160 µg/mL. Before analysis each day, the system was tuned with 50 ng decafluorotriphenylphosphine (DFTPP) and passed a continuing calibration check when analysing a 50 µg/mL standard mixture in which the responses were evaluated by comparison to the average response of the calibration curve.

The BNA results are listed in Table 1.4; the Tentatively Identified Compounds are listed in Table 1.5. The concentration of the detected compounds was calculated using the following equation:

$$C_u = \frac{DF \times A_u \times I_u \times V_i}{A_{us} \times RF \text{ (or } RF_{ave}) \times V_i \times V_o}$$

where

C_u	= Concentration of target analyte ($\mu\text{g/L}$)
DF	= Dilution Factor
A_u	= Area of target analyte
I_{us}	= Mass of specific internal standard (ng)
V_i	= Volume of extract (μL)
A_{us}	= Area of specific internal standard
RF	= Response Factor (unitless)
RF_{ave}	= average Response Factor
V_i	= Volume of extract injected (μL)
V_o	= Volume of sample (mL)

The RF_{ave} is used when a sample is associated with an initial calibration curve. The RF is used when a sample is associated with a continuing calibration curve.

Response Factor calculation:

The RF for each specific analyte is quantitated based on the area response from the continuing calibration check as follows:

$$RF = \frac{A_c \times I_u}{A_{us} \times I_c}$$

where

RF	= Response factor for a specific analyte
A_c	= Area of the analyte in the standard
I_u	= Mass of the specific internal standard
A_{us}	= Area of the specific internal standard

$$RF_{ave} = \frac{RF_1 + \dots + RF_n}{n}$$

I_c = Mass of the analyte in the standard
and

n = number of Samples

Rev. 7/11/94

Analytical Procedure for Metals in Soil

Sample Preparation

A representative 1-2 g (wet weight) sample, weighed to 0.01 g accuracy, was mixed with 10 mL 1:1 nitric acid, placed in a clean beaker and digested in nitric acid and hydrogen peroxide according to SW-846, Method 3050. The final reflux was either nitric acid or hydrochloric acid depending on the metals to be determined. After digestion, the samples were allowed to cool to room temperature and transferred to 100 mL volumetric flasks and diluted to volume with ASTM Type II water. The samples were analyzed for all metals, except mercury, by USEPA SW-846, Method 7000 (Atomic absorption) or Method 6010 (Inductively Coupled Argon Plasma-ICAP) procedures.

A representative 0.5-0.6 g (wet weight) sample, weighed to 0.01 g accuracy, was prepared and analyzed separately for mercury on a Varian SpectraAA-300 Atomic Absorption Spectrophotometer equipped with a Varian VGA-76 vapor gas analyzer according to SW-846, Method 7471.

A separate sample was used to determine total solids. A reagent blank and a blank spike sample were carried through the sample preparation procedure for each batch of samples processed. One matrix spike (MS) and one matrix spike duplicate (MSD) were analyzed for each batch or for every ten samples.

Analysis and Calculations

The instruments were calibrated and operated according to SW-846, Method 7000/7471/6010 and the manufacturers operating instructions. After calibration, initial calibration verification (ICV), initial calibration blank (ICB) and quality control check standards were run to verify proper calibration. The continuing calibration verification (CCV) and continuing calibration blank (CCB) were run after every ten samples to assure proper operation during sample analysis.

The metal concentrations in solution, in micrograms per liter ($\mu\text{g/L}$) were taken from the read-out systems of the Atomic Absorption instruments. The results were converted to milligrams per kilogram (mg/kg) by correcting the reading for the sample weight and percent solids. The ICAP results (mg/kg) were corrected for sample weight prior to instrument read-out; the instrument read-out was then corrected for percent solids.

Final concentrations, based on wet weight are given by:

$$\text{mg metal/kg sample} = [(AxV)/W] \times DF \times CF \quad \text{where:}$$

A = Instrument read-out ($\mu\text{g/L}$, AA; mg/kg, ICAP)

V = final volume of processed sample (mL, AA; 1.00 ICAP)

W = weight of sample (g, AA; 1.00 ICAP)

DF = Dilution Factor (1.00 for no dilution)

CF = conversion factor (0.001, AA; 1.00, ICAP)

For samples that required dilution to be within the instrument calibration range, DF is given by:

$$DF = (C+B)/C \quad \text{where:}$$

B = acid blank matrix used for dilution (mL)

C = sample blank aliquot (mL)

Final concentrations, based on dry weight, are given by:

$$\text{mg/kg(dry)} = [\text{mg/kg (wet)} \times 100] / S \quad \text{where: } S = \text{percent solids}$$

The results are listed in Table 1.6.

Analytical Procedure for Pesticide/PCBs in Water

Extraction Procedure

One liter of sample was spiked with a surrogate solution consisting of tetrachloro-m-xylene and decachlorobiphenyl, and was extracted three times with 60 mL portions of methylene chloride. The combined extracts were filtered, concentrated to 10 mL, solvent exchanged with 60 mL hexane, and the hexane concentrated to 1.0 mL.

Gas Chromatographic Analysis-PCB Quantitation

The diluted samples were analyzed for PCBs using simultaneous dual column injections. The analysis was done on an HP 5890 GC/ECD system, equipped with an HP 7673A automatic sampler, and controlled with an HP-CHEM STATION. The following conditions were employed:

First Column	DB-608, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Second Column	RTX-CLPesticides, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Temperature Program	70°C for 1 minute 30°C/min to 150°C, 0.5min at 150°C 8°C/min to 275°C, 10min at 275°C
Injection Volume	2µL

Gas Chromatographic Analysis-Pesticides and PCBs(screening)

The diluted samples were analyzed for pesticides and PCBs (screening) using simultaneous dual column injections. The analysis was done on an HP 6890 GC/ECD system, equipped with an HP 6890 automatic injector, and controlled with HP-CHEM STATION software. The following conditions were employed:

First Column	DB-608, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Second Column	RTX-CLPesticides, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200° C
Detector Temperature	325° C
Temperature Program	120°C for 1 minute 9°C/min to 285°C, 10 min at 285°C
Injection Volume	1µL

The gas chromatographs were calibrated using 5 pesticide standards at 20, 50, 100, 200, and 500 µg/L. The results from each mixture were used to calculate the response factor (RF) of each analyte and the average Response Factor was used to calculate the concentration of pesticide in the sample. Quantification was based on the DB-608 column (signal 1) and the identity of the analyte was confirmed using the RTX-CLPesticides column (signal 2). A fingerprint chromatogram was run using each of the seven Aroclor mixtures and toxaphene; calibration curves were run only if a particular Aroclor or toxaphene was found in the sample.

The Pesticide/PCB results, listed in Table 1.7, were calculated from the following formula:

$$C_u = \frac{DF \times A_u \times V_i}{RF_{ave} \times V_i \times V_s}$$

where

C_u	= Concentration of analyte ($\mu\text{g/L}$)
DF	= Dilution Factor
A_u	= Area or peak height
V_i	= Volume of sample (mL)
RF_{ave}	= Average response factor
V_i	= Volume of extract injected (μL)
V_s	= Sample volume (mL)

Response Factor calculation:

The RF for each specific analyte is quantitated based on the area response from the continuing calibration check as follows:

$$RF = \frac{A_u}{\text{total pg injected}}$$

where

A_u = Area or peak height

and

$$RF_{ave} = \frac{RF_1 + \dots + RF_n}{n}$$

where

n = number of samples

Revision 10/15/98

Table 1.1 Results of the Analysis for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample No.	Solvent Blank	3304-0001 C8 WEL027 Organic waste 5	3304-0002 D8 WEL028 Organic waste 43	3304-0003 E8 WEL029 Organic waste 50	3304-0004 F8 WEL030 Organic waste 46					
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Phenol	U	10	U	430	U	440	U	500	U	460
bis-(2-Chloroethyl)Ether	U	10	U	430	U	440	U	500	U	460
2-Chlorophenol	U	10	U	430	U	440	U	500	U	460
1,3-Dichlorobenzene	U	10	U	430	U	440	U	500	U	460
1,4-Dichlorobenzene	U	10	U	430	U	440	U	500	U	460
Benzyl alcohol	U	10	U	430	U	440	U	500	U	460
1,2-Dichlorobenzene	U	10	U	430	U	440	U	500	U	460
2-Methylphenol	U	10	U	430	U	440	U	500	U	460
bis(2-Chloroisopropyl)ether	U	10	U	430	U	440	U	500	U	460
4-Methylphenol	U	10	U	430	U	440	U	500	U	460
N-Nitroso-Di-n-propylamine	U	10	U	430	U	440	U	500	U	460
Hexachloroethane	U	10	U	430	U	440	U	500	U	460
Nitrobenzene	U	10	U	430	U	440	U	500	U	460
Isophorone	U	10	U	430	U	440	U	500	U	460
2-Nitrophenol	U	10	U	430	U	440	U	500	U	460
2,4-Dimethylphenol	U	10	U	430	U	440	U	500	U	460
bis(2-Chloroethyl)methane	U	10	U	430	U	440	U	500	U	460
2,4-Dichlorophenol	U	10	U	430	U	440	U	500	U	460
1,2,4-Trichlorobenzene	U	10	U	430	U	440	U	500	U	460
Naphthalene	U	10	330 J	430	U	440	590	500	1200	460
4-Chloraniline	U	10	U	430	U	440	U	500	U	460
Hexachlorobutadiene	U	10	U	430	U	440	U	500	U	460
4-Chloro-3-methylphenol	U	10	U	430	U	440	U	500	U	460
2-Methylnaphthalene	U	10	890	430	1100	440	2000	500	2600	460
Hexachlorocyclopentadiene	U	10	U	430	U	440	U	500	U	460
2,4,6-Trichlorophenol	U	10	U	430	U	440	U	500	U	460
2,4,5-Trichlorophenol	U	10	U	430	U	440	U	500	U	460
2-Chloronaphthalene	U	10	U	430	U	440	U	500	U	460
2-Nitroaniline	U	10	U	430	U	440	U	500	U	460
Dimethylphthalate	U	10	U	430	U	440	U	500	U	460
Acenaphthylene	U	10	U	430	U	440	U	500	U	460
2,6-Dinitrotoluene	U	10	U	430	U	440	U	500	U	460
3-Nitroaniline	U	10	U	430	U	440	U	500	U	460
Acenaphthene	U	10	U	430	U	440	140 J	500	U	460
2,4-Dinitrophenol	U	10	U	430	U	440	U	500	U	460
4-Nitrophenol	U	10	U	430	U	440	U	500	U	460
Dibenzofuran	U	10	U	430	U	440	U	500	U	460
2,4-Dinitrotoluene	U	10	U	430	U	440	U	500	U	460
Diethylphthalate	U	10	U	430	U	440	U	500	U	460
4-Chlorophenyl-phenylether	U	10	U	430	U	440	U	500	U	460
Fluorene	U	10	140 J	430	150 J	440	220 J	500	U	460
4-Nitroaniline	U	10	U	430	U	440	U	500	U	460
4,6-Dinitro-2-methylphenol	U	10	U	430	U	440	U	500	U	460
N-Nitrosodiphenylamine	U	10	U	430	U	440	U	500	U	460
4-Bromophenyl-phenylether	U	10	U	430	U	440	U	500	U	460
Hexachlorobenzene	U	10	U	430	U	440	U	500	U	460
Pentachlorophenol	U	10	U	430	U	440	U	500	U	460
Phenanthrene	U	10	210 J	430	290 J	440	410 J	500	370 J	460
Anthracene	U	10	U	430	U	440	U	500	U	460
Carbazole	U	10	U	430	U	440	U	500	U	460
Di-n-butylphthalate	U	10	U	430	U	440	U	500	U	460
Fluoranthene	U	10	U	430	U	440	U	500	U	460
Pyrene	U	10	U	430	U	440	U	500	U	460
Butylbenzylphthalate	U	10	U	430	U	440	U	500	U	460
Benzo(a)anthracene	U	10	U	430	U	440	U	500	U	460
3,3'-Dichlorobenzidine	U	10	U	430	U	440	U	500	U	460
Chrysene	U	10	U	430	U	440	U	500	U	460
Bis(2-Ethylhexyl)phthalate	U	10	U	430	380 J	440	190 J	500	U	460
Di-n-octylphthalate	U	10	U	430	U	440	U	500	U	460
Benzo(b)fluoranthene	U	10	U	430	U	440	U	500	U	460
Benzo(k)fluoranthene	U	10	U	430	U	440	U	500	U	460
Benzo(a)pyrene	U	10	U	430	U	440	U	500	U	460
Indeno(1,2,3-cd)pyrene	U	10	U	430	U	440	U	500	U	460
Dibenzo(a,h)anthracene	U	10	U	430	U	440	U	500	U	460
Benzo(g,h,i)perylene	U	10	U	430	U	440	U	500	U	460

Table 1.1 (Cont.) Results of the Analysis for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample No.	3304-0009	3304-0013	3304-0014	3304-0015	3304-0026					
Sample Location	E8	E7	F7	G7	I8					
GC/MS File Name	WEL031	WEL032	WEL033	WEL034	WEL035					
Matrix	Organic waste	Organic waste	Organic waste	Organic waste	Organic waste					
Dilution Factor	47	50	50	43	47					
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Phenol	U	470	U	500	U	500	U	430	U	470
bis(2-Chloroethyl)Ether	U	470	U	500	U	500	U	430	U	470
2-Chlorophenol	U	470	U	500	U	500	U	430	U	470
1,3-Dichlorobenzene	U	470	U	500	U	500	U	430	U	470
1,4-Dichlorobenzene	U	470	U	500	U	500	U	430	U	470
Benzyl alcohol	U	470	U	500	U	500	U	430	U	470
1,2-Dichlorobenzene	U	470	U	500	U	500	U	430	U	470
2-Methylphenol	U	470	U	500	U	500	U	430	U	470
bis(2-Chloroisopropyl)ether	U	470	U	500	U	500	U	430	U	470
4-Methylphenol	U	470	U	500	U	500	U	430	U	470
N-Nitroso-Di-n-propylamine	U	470	U	500	U	500	U	430	U	470
Hexachloroethane	U	470	U	500	U	500	U	430	U	470
Nitrobenzene	U	470	U	500	U	500	U	430	U	470
Isophorone	U	470	U	500	U	500	U	430	U	470
2-Nitrophenol	U	470	U	500	U	500	U	430	U	470
2,4-Dimethylphenol	U	470	U	500	U	500	U	430	U	470
bis(2-Chloroethoxy)methane	U	470	U	500	U	500	U	430	U	470
2,4-Dichlorophenol	U	470	U	500	U	500	U	430	U	470
1,2,4-Trichlorobenzene	U	470	U	500	U	500	U	430	U	470
Naphthalene	980	470	580	500	460 J	500	850	430	700	470
4-Chloroaniline	U	470	U	500	U	500	U	430	U	470
Hexachlorobutadiene	U	470	U	500	U	500	U	430	U	470
4-Chloro-3-methylphenol	U	470	U	500	U	500	U	430	U	470
2-Methylnaphthalene	3000	470	2200	500	1700	500	1900	430	1800	470
Hexachlorocyclopentadiene	U	470	U	500	U	500	U	430	U	470
2,4,6-Trichlorophenol	U	470	U	500	U	500	U	430	U	470
2,4,5-Trichlorophenol	U	470	U	500	U	500	U	430	U	470
2-Chloronaphthalene	U	470	U	500	U	500	U	430	U	470
2-Nitroaniline	U	470	U	500	U	500	U	430	U	470
Dimethylphthalate	U	470	U	500	U	500	U	430	U	470
Acenaphthylene	U	470	U	500	U	500	U	430	U	470
2,6-Dinitrotoluene	U	470	U	500	U	500	U	430	U	470
3-Nitroaniline	U	470	U	500	U	500	U	430	U	470
Acenaphthene	U	470	130 J	500	120 J	500	110 J	430	U	470
2,4-Dinitrophenol	U	470	U	500	U	500	U	430	U	470
4-Nitrophenol	U	470	U	500	U	500	U	430	U	470
Dibenzofuran	U	470	U	500	U	500	U	430	U	470
2,4-Dinitrotoluene	U	470	U	500	U	500	U	430	U	470
Diethylphthalate	U	470	U	500	U	500	U	430	U	470
4-Chlorophenyl-phenylether	U	470	U	500	U	500	U	430	U	470
Fluorene	280 J	470	200 J	500	U	500	220 J	430	U	470
4-Nitroaniline	U	470	U	500	U	500	U	430	U	470
4,6-Dinitro-2-methylphenol	U	470	U	500	U	500	U	430	U	470
N-Nitrosodiphenylamine	U	470	U	500	U	500	U	430	U	470
4-Bromophenyl-phenylether	U	470	U	500	U	500	U	430	U	470
Hexachlorobenzene	U	470	U	500	U	500	U	430	U	470
Pentachlorophenol	U	470	U	500	U	500	U	430	U	470
Phenanthrene	580	470	330 J	500	350 J	500	480	430	370 J	470
Anthracene	140 J	470	180 J	500	U	500	U	430	99 J	470
Carbazole	U	470	U	500	U	500	U	430	U	470
Di-n-butylphthalate	U	470	U	500	U	500	U	430	U	470
Fluoranthene	U	470	U	500	U	500	U	430	U	470
Pyrene	130 J	470	U	500	U	500	130 J	430	95 J	470
Butylbenzylphthalate	U	470	U	500	U	500	U	430	U	470
Benzo(a)anthracene	U	470	U	500	U	500	U	430	U	470
3,3'-Dichlorobenzidine	U	470	U	500	U	500	U	430	U	470
Chrysene	U	470	U	500	U	500	U	430	U	470
Bis(2-Ethylhexyl)phthalate	U	470	110 J	500	190 J	500	U	430	U	470
Di-n-octylphthalate	U	470	U	500	U	500	U	430	U	470
Benzo(b)fluoranthene	U	470	U	500	U	500	U	430	U	470
Benzo(k)fluoranthene	U	470	U	500	U	500	U	430	U	470
Benzo(a)pyrene	U	470	U	500	U	500	U	430	U	470
Indeno(1,2,3-cd)pyrene	U	470	U	500	U	500	U	430	U	470
Dibenzo(a,h)anthracene	U	470	U	500	U	500	U	430	U	470
Benzo(g,h,i)perylene	U	470	U	500	U	500	U	430	U	470

Table 1.1 (Cont.) Results of the Analysis for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample No.	3304-0027	3304-0028	3304-0037	3304-0039	3304-0040
Sample Location	H4	H4	G3	H2	G2
GC/MS File Name	WEL036	WEL037	WEL038	WEL039	WEL043
Matrix	Organic waste	Organic waste	Organic waste	Organic waste	Organic waste
Dilution Factor	48	50	49	47	48
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg	Conc. mg/kg
Phenol	U	490	U	500	U
bis(-2-Chloroethyl)Ether	U	490	U	500	U
2-Chlorophenol	U	490	U	500	U
1,3-Dichlorobenzene	U	490	U	500	U
1,4-Dichlorobenzene	U	490	U	500	U
Benzyl alcohol	U	490	U	500	U
1,2-Dichlorobenzene	U	490	U	500	U
2-Methylphenol	U	490	U	500	U
bis(2-Chloroisopropyl)ether	U	490	U	500	U
4-Methylphenol	U	490	U	500	U
N-Nitroso-Di-n-propylamine	U	490	U	500	U
Hexachloroethane	U	490	U	500	U
Nitrobenzene	U	490	U	500	U
Isophorone	U	490	U	500	U
2-Nitrophenol	U	490	U	500	U
2,4-Dimethylphenol	U	490	U	500	U
bis(2-Chloroethoxy)methane	U	490	U	500	U
2,4-Dichlorophenol	U	490	U	500	U
1,2,4-Trichlorobenzene	U	490	U	500	U
Naphthalene	570	490	990	500	780
4-Chloroaniline	U	490	U	500	U
Hexachlorobutadiene	U	490	U	500	U
4-Chloro-3-methylphenol	U	490	U	500	U
2-Methylnaphthalene	1600	490	2100	500	1900
Hexachlorocyclopentadiene	U	490	U	500	U
2,4,6-Trichlorophenol	U	490	U	500	U
2,4,5-Trichlorophenol	U	490	U	500	U
2-Chloronaphthalene	U	490	U	500	U
2-Nitroaniline	U	490	U	500	U
Dimethylphthalate	U	490	U	500	U
Acenaphthylene	U	490	U	500	U
2,6-Dinitrotoluene	U	490	U	500	U
3-Nitroaniline	U	490	U	500	U
Acenaphthene	U	490	U	500	U
2,4-Dinitrophenol	U	490	U	500	U
4-Nitrophenol	U	490	U	500	U
Dibenzofuran	U	490	U	500	U
2,4-Dinitrotoluene	U	490	U	500	U
Diethylphthalate	U	490	U	500	U
4-Chlorophenyl-phenylether	U	490	U	500	U
Fluorene	U	490	180 J	500	160 J
4-Nitroaniline	U	490	U	500	U
4,6-Dinitro-2-methylphenol	U	490	U	500	U
N-Nitrosodiphenylamine	U	490	U	500	U
4-Bromophenyl-phenylether	U	490	U	500	U
Hexachlorobenzene	U	490	U	500	U
Pentachlorophenol	U	490	U	500	U
Phenanthrene	270 J	490	320 J	500	300 J
Anthracene	U	490	U	500	U
Carbazole	U	490	U	500	U
Di-n-butylphthalate	U	490	U	500	U
Fluoranthene	U	490	U	500	U
Pyrene	100 J	490	U	500	U
Butylbenzylphthalate	U	490	U	500	U
Benzo(a)anthracene	U	490	U	500	U
3,3'-Dichlorobenzidine	U	490	U	500	U
Chrysene	U	490	U	500	U
Bis(2-Ethylhexyl)phthalate	300 J	490	U	500	180 J
Di-n-octylphthalate	U	490	U	500	U
Benzo(b)fluoranthene	U	490	U	500	U
Benzo(k)fluoranthene	U	490	U	500	U
Benzo(a)pyrene	U	490	U	500	U
Indeno(1,2,3-cd)pyrene	U	490	U	500	U
Dibenzo(a,h)anthracene	U	490	U	500	U
Benzo(g,h,i)perylene	U	490	U	500	U

Table 1.1 (Cont.) Results of the Analysis for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample No.	3304-0044	3304-0045		
Sample Location	F1	G1		
GC/MS File Name	WELD044	WELD045		
Matrix	Organic waste	Organic waste		
Dilution Factor	43	49		
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Phenol	U	430	U	490
bis(-2-Chloroethyl)Ether	U	430	U	490
2-Chlorophenol	U	430	U	490
1,3-Dichlorobenzene	U	430	U	490
1,4-Dichlorobenzene	U	430	U	490
Benzyl alcohol	U	430	U	490
1,2-Dichlorobenzene	U	430	U	490
2-Methylphenol	U	430	U	490
bis(2-Chloroisopropyl)ether	U	430	U	490
4-Methylphenol	U	430	U	490
N-Nitroso-Di-n-propylamine	U	430	U	490
Hexachloroethane	U	430	U	490
Nitrobenzene	U	430	U	490
Isophorone	U	430	U	490
2-Nitrophenol	U	430	U	490
2,4-Dimethylphenol	U	430	U	490
bis(2-Chloroethoxy)methane	U	430	U	490
2,4-Dichlorophenol	U	430	U	490
1,2,4-Trichlorobenzene	U	430	U	490
Naphthalene	590	430	620	490
4-Chloroaniline	U	430	U	490
Hexachlorobutadiene	U	430	U	490
4-Chloro-3-methylphenol	U	430	U	490
2-Methylnaphthalene	1600	430	1700	490
Hexachlorocyclopentadiene	U	430	U	490
2,4,6-Trichlorophenol	U	430	U	490
2,4,5-Trichlorophenol	U	430	U	490
2-Chloronaphthalene	U	430	U	490
2-Nitroaniline	U	430	U	490
Dimethylphthalate	U	430	U	490
Acenaphthylene	U	430	U	490
2,6-Dinitrotoluene	U	430	U	490
3-Nitroaniline	U	430	U	490
Acenaphthene	U	430	U	490
2,4-Dinitrophenol	U	430	U	490
4-Nitrophenol	U	430	U	490
Dibenzofuran	U	430	U	490
2,4-Dinitrotoluene	U	430	U	490
Diethylphthalate	U	430	U	490
4-Chlorophenyl-phenylether	U	430	U	490
Fluorene	170 J	430	160 J	490
4-Nitroaniline	U	430	U	490
4,6-Dinitro-2-methylphenol	U	430	U	490
N-Nitrosodiphenylamine	U	430	U	490
4-Bromophenyl-phenylether	U	430	U	490
Hexachlorobenzene	U	430	U	490
Pentachlorophenol	U	430	U	490
Phenanthrene	290 J	430	280 J	490
Anthracene	U	430	U	490
Carbazole	U	430	U	490
Di-n-butylphthalate	U	430	U	490
Fluoranthene	U	430	U	490
Pyrene	U	430	U	490
Butylbenzylphthalate	U	430	U	490
Benzol[a]anthracene	U	430	U	490
3,3'-Dichlorobenzidine	U	430	U	490
Chrysene	U	430	U	490
Bis(2-Ethylhexyl)phthalate	U	430	U	490
Di-n-octylphthalate	U	430	U	490
Benzo(b)fluoranthene	U	430	U	490
Benzo(k)fluoranthene	U	430	U	490
Benzo(a)pyrene	U	430	U	490
Indeno(1,2,3-cd)pyrene	U	430	U	490
Dibenzo(a,h)anthracene	U	430	U	490
Benzo(g,h,i)perylene	U	430	U	490

Table 1.1 (Cont.) Results of the Analysis for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample No.	Blank	3304-0047		
Sample Location	—	600 gal Baker Tank		
GC/MS File Name	WDI032	WDI034		
Matrix	DCM	Organic Waste		
Dilution Factor	1	47		
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Phenol	U	10	U	470
bis-(2-Chloroethyl)Ether	U	10	U	470
2-Chlorophenol	U	10	U	470
1,3-Dichlorobenzene	U	10	U	470
1,4-Dichlorobenzene	U	10	U	470
Benzyl alcohol	U	10	U	470
1,2-Dichlorobenzene	U	10	U	470
2-Methylphenol	U	10	U	470
bis(2-Chloroisopropyl)ether	U	10	U	470
4-Methylphenol	U	10	U	470
N-Nitroso-Di-n-propylamine	U	10	U	470
Hexachloroethane	U	10	U	470
Nitrobenzene	U	10	U	470
Isophorone	U	10	U	470
2-Nitrophenol	U	10	U	470
2,4-Dimethylphenol	U	10	U	470
bis(2-Chloroethoxy)methane	U	10	U	470
2,4-Dichlorophenol	U	10	U	470
1,2,4-Trichlorobenzene	U	10	96 J	470
Naphthalene	U	10	370 J	470
4-Chloraniline	U	10	U	470
Hexachlorobutadiene	U	10	U	470
4-Chloro-3-methylphenol	U	10	U	470
2-Methylnaphthalene	U	10	1600	470
Hexachlorocyclopentadiene	U	10	U	470
2,4,6-Trichlorophenol	U	10	U	470
2,4,5-Trichlorophenol	U	10	U	470
2-Chloronaphthalene	U	10	U	470
2-Nitroaniline	U	10	U	470
Dimethylphthalate	U	10	U	470
Acenaphthylene	U	10	U	470
2,6-Dinitrotoluene	U	10	U	470
3-Nitroaniline	U	10	U	470
Acenaphthene	U	10	150 J	470
2,4-Dinitrophenol	U	10	U	470
4-Nitrophenol	U	10	U	470
Dibenzofuran	U	10	U	470
2,4-Dinitrotoluene	U	10	U	470
Diethylphthalate	U	10	U	470
4-Chlorophenyl-phenylether	U	10	U	470
Fluorene	U	10	230 J	470
4-Nitroaniline	U	10	U	470
4,6-Dinitro-2-methylphenol	U	10	U	470
N-Nitrosodiphenylamine	U	10	U	470
4-Bromophenyl-phenylether	U	10	U	470
Hexachlorobenzene	U	10	U	470
Pentachlorophenol	U	10	U	470
Phenanthere	U	10	440 J	470
Anthracene	U	10	350 J	470
Carbazole	U	10	U	470
D-n-butylphthalate	U	10	U	470
Fluoranthene	U	10	110 J	470
Pyrene	U	10	120 J	470
Butylbenzylphthalate	U	10	U	470
Benzofluoranthene	U	10	U	470
3,3'-Dichlorobenzidine	U	10	U	470
Chrysene	U	10	U	470
Bis(2-Ethylhexyl)phthalate	U	10	500	470
D-n-octylphthalate	U	10	U	470
Benzofluoranthene	U	10	U	470
Benzofluoranthene	U	10	U	470
Benzos(a)pyrene	U	10	U	470
Indeno(1,2,3-cd)pyrene	U	10	U	470
Dibenzos(a,h)anthracene	U	10	U	470
Benzo(g,h,i)perylene	U	10	U	470

Table 1. 2 Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample #	Solvent Blank	Con. Factor	5	Conc ** mg/kg
LabFile #	WEL027	Q	RT	
1	No TIC's Detected			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

**Estimated Concentration (Response Factor = 1.0)

Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0001

LabFile # WEL024

Con. Factor

43

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane isomer		3.61	2200
2		Trimethyl-cycloalkane isomer		3.72	1000
3		Alkane / Alkyl benzene		3.80	890
4		Alkane/cycloalkane		4.02	1400
5		Alkane		4.31	2100
6		Alkene/cyloalkane		4.38	1600
7		Alkene		4.64	1600
8		Alkane		5.03	2200
9		Alkene/cyloalkane		5.21	1100
10		Alkyl naphthalene isomer		5.52	960
11		Alkene/cyloalkane		5.64	2800
12		Alkene/cycloalkane + methyl indene isomer		5.73	1000
13		Alkane		6.95	1700
14		Alkane		7.68	1800
15		Dimethyl naphthalene isomer		8.15	930
16		Alkane		8.24	2500
17		Alkane		9.71	4100
18		Alkane		10.28	3100
19		Alkane		10.71	970
20		Alkane		12.34	900

** Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0002

LabFile # WEL028

Con. Factor

44

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane isomer		3.61	1400
2		Alkane		4.31	1600
3		Cycloalkane		4.38	1300
4		Alkene		4.64	1200
5		Alkane		5.03	2000
6		Alkene/cycloalkane		5.21	1000
7		Alkyl naphthalene isomer		5.52	820
8		Alkene/cycloalkane		5.63	2300
9		Alkene/cycloalkane + methyl indene isomer		5.73	940
10		Cycloalkane		6.04	880
11		Alkane		6.95	3700
12		Alkyl benzene + dihydro-dimethyl-indene isomer		7.12	810
13		Alkane		7.27	1400
14		Methyl-naphthalene isomer		7.53	1400
15		Alkane		7.68	1800
16		Dimethyl-naphthalene isomer		8.15	870
17		Alkane		8.24	2600
18		Alkane		9.71	4100
19		Alkane		10.28	2700
20		Alkane		10.71	1100

**Estimated Concentration (Response Factor = 1.0)

Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0003

LabFile # WEL029

	CAS#	Compound	Con. Factor	50	Conc **
	CAS#	Compound	Q	RT	mg/kg
1		Trimethyl-cycloalkane		3.61	1800
2		Alkane + cycloalkane		4.02	1800
3		Alkane		4.31	2000
4		Alkene/cycloalkane + trimethyl-benzene isomer		4.64	2200
5		Alkane		4.84	2900
6		Trimethyl-benene isomer		4.92	1900
7		Alkane		5.03	2500
8		Alkane		5.65	6000
9		Alkyl naphthalene isomer + alkyl benzene		5.95	3000
10		Alkene/cycloalkane		6.03	2100
11		Alkane		6.42	4800
12		Alkane		6.95	9200
13		Alkyl benzene + dihydro-dimethyl-indene isomer + alkene/cycloalkane		7.11	2000
14		Alkane		7.15	3800
15		Alkane		7.27	3600
16		Methyl-naphthalene isomer		7.53	9000
17		Alkane		7.68	2300
18		Alkane		8.24	4000
19		Alkane		9.71	5300
20		Alkane		10.28	3700

**Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0004

LabFile # WEL030

Con. Factor

46

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane isomer		3.61	8400
2		Trimethyl-cycloalkane isomer + alkane		3.73	4100
3		Alkane + alkyl benzene		3.80	3900
4		Dimethyl-benzene isomer		3.87	7200
5		Alkane + cycloalkane		4.02	9400
6		Alkane		4.31	6900
7		Alkene/cycloalkane		4.38	5500
8		Alkane		4.84	8700
9		Trimethyl-benzene isomer		4.92	6400
10		Alkane		5.03	5800
11		Trimethyl-benzene isomer		5.18	3700
12		Alkane		5.65	17000
13		Alkane		7.84	4100
14		Alkane		8.24	4600
15		Alkane		8.48	4100
16		Alkane		9.09	4600
17		Alkane		9.67	4400
18		Alkane		9.71	5300
19		Alkane		10.22	3800
20		Alkane		11.24	3700

**Estimated Concentration (Response Factor = 1.0)

Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0009

LabFile # WEL031

Con. Factor

47

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane isomer		3.61	3100
2		Alkene/cycloalkane + alkyl benzene		4.63	2500
3		Alkane		5.65	7300
4		Alkane		5.87	2500
5		Alkyl naphthalene isomer + alkene		5.95	3200
6		Alkene/cycloalkane		6.04	3000
7		Alkyl benzene isomer + alkene		6.10	2700
8		Alkane		6.41	7100
9		Alkene/cycloalkane		6.82	2500
10		Alkane		6.96	12000
11		Alkane		7.15	9000
12		Alkane		7.28	6100
13		Methyl-naphthalene isomer		7.53	14000
14		Alkane		7.68	2700
15		Alkane		8.24	4500
16		Alkane		8.48	2600
17		Alkane		9.08	3300
18		Alkane		9.67	2900
19		Alkane		9.70	5200
20		Alkane		10.28	3500

** Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0013

LabFile # WEL032

Con. Factor

50

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane		3.61	1700
2		Alkane + cycloalkane		4.02	1600
3		Alkane		4.31	1900
4		Alkene + trimethyl-benzene isomer		4.64	2000
5		Alkane		4.84	2900
6		Trimethyl-benzene isomer		4.92	1700
7		Alkane		5.03	2300
8		Trimethyl-benzene isomer		5.18	1700
9		Alkane		5.65	5000
10		Alkane		6.95	1900
11		Alkane		7.14	1800
12		Methyl-naphthalene isomer		7.53	2000
13		Alkane		7.68	2300
14		Alkane		7.83	2900
15		Dimethyl-naphthalene		8.15	1900
16		Alkane		8.24	4100
17		Alkane		9.09	3000
18		Alkane		9.66	2100
19		Alkane		9.71	3900
20		Alkane		10.28	2400

**Estimated Concentration (Response Factor = 1.0)

Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0014

LabFile # WEL033

	CAS#	Compound	Q	RT	Con. Factor	50
					Conc ** mg/kg	
1		Trimethyl-cycloalkane isomer		3.61	1600	
2		Alkane + cycloalkane		4.02	1700	
3		Alkane		4.31	2000	
4		Cycloalkane		4.37	1700	
5		Alkene/cycloalkane + alkyl benzene isomer		4.63	2200	
6		Alkane		4.84	2900	
7		Trimethyl-benzene isomer		4.92	2000	
8		Alkane		5.03	2500	
9		Trimethyl-benzene isomer		5.17	1600	
10		Trimethyl-benzene isomer		5.65	6000	
11		Alkene/cycloalkane + methylindene isomer		5.73	1300	
12		Alkane		6.41	1400	
13		Alkane		6.95	3200	
14		Methyl-naphthalene isomer		7.53	1500	
15		Alkane		7.69	2300	
16		Dimethyl-naphthalene isomer		8.15	1800	
17		Alkane		8.24	4000	
18		Trimethyl-naphthalene isomer		9.08	1400	
19		Alkane		9.70	5500	
20		Alkane		10.28	3700	

**Estimated Concentration (Response Factor = 1.0)

00028

3304\DEL\VAR\9810\WDIORGWASTBNA

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
 WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0015

LabFile # WEL034

Con. Factor

43

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane isomer		3.61	2700
2		Alkane + cycloalkane		4.02	2200
3		Alkane		4.31	2400
4		Alkene + alkyl benzene		4.64	2400
5		Alkane		4.84	2200
6		Alkane		5.03	2300
7		Alkane		5.65	5500
8		Alkane		5.88	2100
9		Alkene + decahydro-methyl-naphthalene isomer		5.95	3600
10		Cycloalkane		6.03	2400
11		Alkene + decahydro-methyl-naphthalene isomer		6.10	2400
12		Alkane		6.42	4000
13		Alkane		6.95	10000
14		Alkane		7.15	2700
15		Alkane		7.27	3800
16		Methyl-naphthalene isomer		7.53	8600
17		Alkane		7.68	2700
18		Alkane		8.24	4200
19		Alkane		9.71	5300
20		Alkane		10.28	3700

** Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0026

LabFile # WEL035

Con. Factor

47

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane		3.61	2600
2		Alkane + cycloalkane		4.02	2300
3		Alkane		4.31	2400
4		Alkene/cycloalkane + trimethyl-benzene isomer		4.63	2400
5		Alkane		4.84	2400
6		Alkane		5.03	2300
7		Alkane		5.65	6600
8		Alkane		6.95	2500
9		Alkane		7.15	2700
10		Alkane		7.69	2800
11		Alkane		7.83	2800
12		Alkane		8.24	4300
13		Alkane		8.48	3000
14		Alkane		9.08	3600
15		Alkane		9.67	3100
16		Alkane		9.70	5100
17		Alkane		10.22	2700
18		Alkane		10.28	3400
19		Alkane		11.24	2700
20		Alkane		11.71	2700

**Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0027

LabFile # WEL036

Con. Factor

49

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Alkene + trimethyl-benzene isomer		4.64	1700
2		Alkane		4.84	2200
3		Alkane		5.03	2000
4		Trimethyl-benzene isomer		5.18	1600
5		Alkane		5.64	3500
6		Alkane		6.42	1600
7		Alkane		6.95	2200
8		Alkane		7.14	2000
9		Methyl-naphthalene isomer		7.53	2200
10		Alkane		7.68	3500
11		Alkane		7.83	3500
12		Alkane		8.24	4000
13		Alkane		8.48	2500
14		Alkane		9.09	2800
15		Alkane		9.66	2300
16		Alkane		9.70	3700
17		Alkane		10.22	1700
18		Alkane		10.27	2600
19		Alkane		11.24	1800
20		Alkane		11.71	1800

**Estimated Concentration (Response Factor = 1.0)

Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0028

LabFile # WEL037

	CAS#	Compound	Q	RT	Con. Factor	50
					Conc ** mg/kg	
1		Trimethyl-cycloalkane		3.61	5100	
2		Dimethyl-benzene isomer		3.87	3200	
3		Alkane		4.02	4100	
4		Alkane		4.31	4200	
5		Alkene/cycloalkane		4.38	3200	
6		Alkene + trimethyl-benzene isomer + alkyl benzene		4.64	4000	
7		Alkane		4.84	4200	
8		Trimethyl-benzene isomer		4.92	3300	
9		Alkane		5.03	3800	
10		Trimethyl-benzene isomer		5.18	2600	
11		Alkane		5.64	9800	
12		Alkane		6.95	2700	
13		Alkane		7.68	3500	
14		Alkane		7.83	3300	
15		Alkane		8.24	4200	
16		Alkane		9.09	3000	
17		Alkane		9.66	3000	
18		Alkane		9.71	4900	
19		Alkane		10.22	2700	
20		Alkane		10.27	3400	

** Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0037

LabFile # WEL038

Con. Factor

49

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane		3.61	3800
2		Trimethyl-cycloalkane		3.73	1700
3		Dimethyl-benzene isomer		3.87	2000
4		Alkane + cycloalkane		4.03	3200
5		Alkane		4.31	3400
6		Alkene/cycloalkane		4.37	2400
7		Alkene + trimethyl-benzene isomer + alkyl benzene		4.63	3100
8		Alkane		4.84	3200
9		Trimethyl-benzene isomer		4.92	2700
10		Alkane		5.03	3000
11		Alkane		5.65	8700
12		Alkene/cycloalkane + methylindene isomer		5.73	2000
13		Alkane		6.95	1700
14		Alkane		7.68	2800
15		Alkane		8.24	4000
16		Alkane + unknown		9.08	2200
17		Alkane		9.67	1900
18		Alkane		9.70	5100
19		Alkane		10.28	3500
20		Alkane		11.24	1700

**Estimated Concentration (Response Factor = 1.0)

**Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.**

Sample # 3303-0039

LabFile # WEL039

Con. Factor

47

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane		3.61	4800
2		Dimethyl-benzene isomer		3.87	2400
3		Alkane + cycloalkane		4.02	3300
4		Alkane		4.31	3400
5		Alkene/cycloalkane		4.38	2500
6		C10 Alkene + trimethyl-benzene isomer + alkyl benzene		4.64	3100
7		Alkane		4.84	3000
8		Alkane		5.03	2700
9		Trimethyl-benzene isomer		5.18	2100
10		Alkane		5.64	6500
11		Alkane		7.68	2600
12		Alkane		7.83	2900
13		Alkane		8.24	3600
14		Alkane		8.48	2300
15		Alkane		9.09	2700
16		Alkane		9.66	2500
17		Alkane		9.71	4200
18		Alkane		10.22	2300
19		Alkane		10.28	3100
20		Alkane		11.71	2100

**Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0040

LabFile # WEL043

Con. Factor

48

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Alkane		4.84	2200
2		Alkane		5.65	4700
3		Alkene + 4,7,7-trimethyl-bicycloheptan-3-one		5.95	2600
4		Alkene/cycloalkane		6.03	2300
5		Decahydro-2-methyl-naphthalene + alkene		6.10	2900
6		Alkane		6.41	6300
7		Alkane		6.95	8900
8		Alkane		7.15	7100
9		Alkane		7.28	3400
10		Methyl-naphthalene isomer		7.53	3600
11		Alkane		7.68	2700
12		Alkane		7.83	2500
13		Alkane		8.24	4100
14		Alkane		8.48	2600
15		Alkane		9.08	3100
16		Alkane		9.67	2600
17		Alkane		9.70	5900
18		Alkane		10.22	2200
19		Alkane		10.28	4100
20		Alkane		11.24	2200

**Estimated Concentration (Response Factor = 1.0)

Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0044

LabFile # WEL044

Con. Factor

43

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane isomer		3.61	3100
2		Dimethyl-benzene isomer		3.87	1800
3		Alkane + cycloalkane		4.02	2600
4		Alkane		4.31	2500
5		Cycloalkane		4.38	1900
6		Alkane		4.84	2800
7		Trimethyl-benzene isomer		4.92	2000
8		Alkane		5.03	2200
9		Alkane		5.64	5900
10		Alkane		6.95	1800
11		Alkane		7.68	2500
12		Alkane		7.83	2400
13		Alkane		8.24	3000
14		Alkane		8.48	1900
15		Alkane		9.09	2400
16		Alkane		9.66	2400
17		Alkane		9.71	4600
18		Alkane		10.22	1800
19		Alkane		10.28	3200
20		Alkane		11.24	1800

** Estimated Concentration (Response Factor = 1.0)

Table 1. 2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample # 3303-0045

LabFile # WEL045

Con. Factor

49

	CAS#	Compound	Q	RT	Conc ** mg/kg
1		Trimethyl-cycloalkane isomer		3.61	4700
2		Dimethyl-benzene isomer		3.87	3100
3		Alkane + cycloalkane		4.02	4200
4		Alkane		4.31	4000
5		Cycloalkane		4.38	2600
6		Alkane		4.84	4000
7		Trimethyl-benzene isomer		4.92	3100
8		Alkane		5.03	3400
9		Alkane		5.65	9200
10		Alkane		7.68	2600
11		Alkane		7.83	3200
12		Alkane		8.24	3800
13		Alkane		8.48	2500
14		Alkane		9.09	3000
15		Alkane		9.66	2900
16		Alkane		9.71	4600
17		Alkane		10.28	3100
18		Alkane		10.74	2500
19		Alkane		11.24	2500
20		Alkane		11.71	2400

**Estimated Concentration (Response Factor = 1.0)

Table 1.2 (Cont.) Results of the TIC for BNA in Liquid Organic Waste
 WA # 3-304 Waste Disposal, Inc.

Sample #	Blank	Con. Factor	1.0	
LabFile#	WDI032			
	Compound	Q	RT	Conc.** mg/kg
1	no tics were found			
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

** Estimated Concentration (Response Factor = 1)

Table 1.2 (Cont) Results of the TIC for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample #	3304-0047		Con. Factor	47	
LabFile#	WDI034			Conc.** mg/kg	
	CAS#	Compound	Q	RT	
1	001120-21-4	Undecane	95	5.66	2900
2	00112-40-3	Pentadecane	95	6.42	1500
3		Alkane		6.97	2500
4	00629-50-5	Tridecane	96	7.16	3100
5		Methyl-naphthalene isomer		7.55	2000
6		Alkane		7.70	3200
7		Alkane		7.84	3900
8		Dimethyl-naphthalene isomer		8.17	1700
9		Alkane		8.26	4600
10		Alkane + dimethyl-naphthalene isomer		8.32	1300
11	00629-62-9	Pentadecane	96	8.50	3400
12		Dimethyl-naphthalene isomer		8.54	1200
13		Alkane		9.69	3900
14		Alkane		9.73	4500
15		Alkane		10.24	2700
16		Alkane		10.30	3200
17		Alkane		10.76	2300
18		Alkane		11.27	2300
19		Alkane		11.74	2100
20		Alkane		12.19	1500

* *Estimated Concentration (Response Factor = 1)

Table 1.3 Results of the Analysis for Pesticide/PCB in Liquid Organic Waste:
WA# 3-304 Waste Disposal, Inc.

Client ID Location	SBLK081898		3304-0001 C9		3304-0002 D9		3304-0003 E9		3304-0004 F9	
	Analyte	Conc. μg/kg	MDL μg/kg	Conc. μg/kg	MDL μg/kg	Conc. μg/kg	MDL μg/kg	Conc. μg/kg	MDL μg/kg	Conc. μg/kg
a-BHC	U	100	U	93	U	92	U	91	U	93
g-BHC	U	100	U	93	U	92	U	91	U	93
b-BHC	U	100	U	93	U	92	U	91	U	93
Heptachlor	U	100	U	93	U	92	U	91	U	93
d-BHC	U	100	U	93	U	92	U	91	U	93
Aldrin	U	100	U	93	U	92	U	91	U	93
Heptachlor Epoxide	U	100	U	93	U	92	U	91	U	93
g-Chlordane	U	100	U	93	U	92	U	91	U	93
a-Chlordane	U	100	U	93	U	92	U	91	U	93
Endosulfan (I)	U	100	U	93	U	92	U	91	U	93
p,p'-DD E	U	100	U	93	U	92	U	91	U	93
Dieldrin	U	100	U	93	U	92	U	91	U	93
Endrin	U	100	U	93	U	92	U	91	U	93
p,p'-DD D	U	100	U	93	U	92	U	91	U	93
Endosulfan (II)	U	100	U	93	U	92	U	91	U	93
p,p'-DD T	U	100	U	93	U	92	U	91	U	93
Endrin Aldehyde	U	100	U	93	U	92	U	91	U	93
Endosulfan Sulfate	U	100	U	93	U	92	U	91	U	93
Methoxychlor	U	100	U	93	U	92	U	91	U	93
Endrin Ketone	U	100	U	93	U	92	U	91	U	93
Toxaphene	U	2500	U	2300	U	2300	U	2300	U	2300
Aroclor 1016	U	1300	U	1200	U	1100	U	1100	U	1200
Aroclor 1221	U	2500	U	2300	U	2300	U	2300	U	2300
Aroclor 1232	U	1300	U	1200	U	1100	U	1100	U	1200
Aroclor 1242	U	1300	U	1200	U	1100	U	1100	U	1200
Aroclor 1248	U	1300	6820 W	1200	17000	1100	16800	1100	3540	1200
Aroclor 1254	U	1300	U	1200	U	1100	U	1100	U	1200
Aroclor 1260	U	1300	4800	1200	4200	1100	11000	1100	460 J	1200

Table 1.3 (Cont.) Results of the Analysis for Pesticide/PCB in Liquid Organic Waste
WA# 3-304 Waste Disposal, Inc.

Client ID Location	3304-0009 E8		3304-013 E7		3304-0014 F7		3304-0015 G7		3304-0026 I5	
	Conc. μg/kg	MDL μg/kg	Conc. μg/kg	MDL μg/kg	Conc. μg/kg	MDL μg/kg	Conc. μg/kg	MDL μg/kg	Conc. μg/kg	MDL μg/kg
a-BHC	U	99	U	97	U	99	U	92	U	97
g-BHC	U	99	U	97	U	99	U	92	U	97
b-BHC	U	99	U	97	U	99	U	92	U	97
Heptachlor	U	99	U	97	U	99	U	92	U	97
d-BHC	U	99	U	97	U	99	U	92	U	97
Aldrin	U	99	U	97	U	99	U	92	U	97
Heptachlor Epoxide	U	99	U	97	U	99	U	92	U	97
g-Chlordane	U	99	U	97	U	99	U	92	U	97
a-Chlordane	U	99	U	97	U	99	U	92	U	97
Endosulfan (I)	U	99	U	97	U	99	U	92	U	97
p,p'-D D E	U	99	U	97	U	99	U	92	U	97
Dieldrin	U	99	U	97	U	99	U	92	U	97
Endrin	U	99	U	97	U	99	U	92	U	97
p,p'-D D D	U	99	U	97	U	99	U	92	U	97
Endosulfan (II)	U	99	U	97	U	99	U	92	U	97
p,p'-D D T	U	99	U	97	U	99	U	92	U	97
Endrin Aldehyde	U	99	U	97	U	99	U	92	U	97
Endosulfan Sulfate	U	99	U	97	U	99	U	92	U	97
Methoxychlor	U	99	U	97	U	99	U	92	U	97
Endrin Ketone	U	99	U	97	U	99	U	92	U	97
Toxaphene	U	2500	U	2400	U	2500	U	2300	U	2400
Aroclor 1016	U	1200	U	1200	U	1200	U	1100	U	1200
Aroclor 1221	U	2500	U	2400	U	2500	U	2300	U	2400
Aroclor 1232	U	1200	U	1200	U	1200	U	1100	U	1200
Aroclor 1242	U	1200	U	1200	U	1200	U	1100	U	1200
Aroclor 1248	6400 W	1200	21600	1200	11000	1200	4360	1100	8520	1200
Aroclor 1254	U	1200	U	1200	U	1200	U	1100	U	1200
Aroclor 1260	3300	1200	22000	1200	6100	1200	3200	1100	15000	1200

Table 1.3 (Cont.) Results of the Analysis for Pesticide/PCB in Liquid Organic Waste
WA# 3-304 Waste Disposal, Inc.

Client ID Location	3304-0027 I4		3304-0028 H4		3304-0037 G3		3304-0039 H2		3304-0040 G2	
	Conc. µg/kg	MDL µg/kg								
a-BHC	U	87	U	92	U	99	U	96	U	91
g-BHC	U	87	U	92	U	99	U	96	U	91
b-BHC	U	87	U	92	U	99	U	96	U	91
Heptachlor	U	87	U	92	U	99	U	96	U	91
d-BHC	U	87	U	92	U	99	U	96	U	91
Aldrin	U	87	U	92	U	99	U	96	U	91
Heptachlor Epoxide	U	87	U	92	U	99	U	96	U	91
g-Chlordane	U	87	U	92	U	99	U	96	U	91
a-Chlordane	U	87	U	92	U	99	U	96	U	91
Endosulfan (I)	U	87	U	92	U	99	U	96	U	91
p,p'-DDE	U	87	U	92	U	99	U	96	U	91
Dieldrin	U	87	U	92	U	99	U	96	U	91
Endrin	U	87	U	92	U	99	U	96	U	91
p,p'-DDT	U	87	U	92	U	99	U	96	U	91
Endosulfan (II)	U	87	U	92	U	99	U	96	U	91
p,p'-DT	U	87	U	92	U	99	U	96	U	91
Endrin Aldehyde	U	87	U	92	U	99	U	96	U	91
Endosulfan Sulfate	U	87	U	92	U	99	U	96	U	91
Methoxychlor	U	87	U	92	U	99	U	96	U	91
Endrin Ketone	U	87	U	92	U	99	U	96	U	91
Toxaphene	U	2200	U	2300	U	2500	U	2400	U	2300
Aroclor 1016	U	1100	U	1100	U	1200	U	1200	U	1100
Aroclor 1221	U	2200	U	2300	U	2500	U	2400	U	2300
Aroclor 1232	U	1100	U	1100	U	1200	U	1200	U	1100
Aroclor 1242	U	1100	U	1100	U	1200	U	1200	U	1100
Aroclor 1248	61000	1100	3380	1100	13400	1200	400 W	1200	13400	1100
Aroclor 1254	U	1100	U	1100	U	1200	U	1200	U	1100
Aroclor 1260	78400	1100	590 J	1100	4300	1200	470 J	1200	6400	1100

Table 1.3 (Cont.) Results of the Analysis for Pesticide/PCB in Liquid Organic Waste
WA# 3-304 Waste Disposal, Inc.

Client ID Location	3304-0044		3304-0045	
	F1	G1	Conc. µg/kg	MDL µg/kg
Analytic	Conc. µg/kg	MDL µg/kg	Conc. µg/kg	MDL µg/kg
a-BHC	U	91	U	99
g-BHC	U	91	U	99
b-BHC	U	91	U	99
Heptachlor	U	91	U	99
d-BHC	U	91	U	99
Aldrin	U	91	U	99
Heptachlor Epoxide	U	91	U	99
g-Chlordane	U	91	U	99
a-Chlordane	U	91	U	99
Endosulfan (I)	U	91	U	99
p,p'-D D E	U	91	U	99
Dieldrin	U	91	U	99
Endrin	U	91	U	99
p,p'-D D D	U	91	U	99
Endosulfan (II)	U	91	U	99
p,p'-D D T	U	91	U	99
Endrin Aldehyde	U	91	U	99
Endosulfan Sulfate	U	91	U	99
Methoxychlor	U	91	U	99
Endrin Ketone	U	91	U	99
Toxaphene	U	2300	U	2500
Aroclor 1016	U	1100	U	1200
Aroclor 1221	U	2300	U	2500
Aroclor 1232	U	1100	U	1200
Aroclor 1242	U	1100	U	1200
Aroclor 1248	3840	1100	2200 W	1200
Aroclor 1254	U	1100	U	1200
Aroclor 1260	1100	1100	1300	1200

**Table 1.3 (Cont.) Results of the Analysis for Pesticide/PCB in Liquid Organic Waste
WA# 3-304 Waste Disposal, Inc.**

Client ID	3304-0047	
Location	600 gal Baker Tank	
Analyte	Conc. µg/kg	MDL µg/kg
a-BHC	U	93
g-BHC	U	93
b-BHC	U	93
Heptachlor	U	93
d-BHC	U	93
Aldrin	U	93
Heptachlor Epoxide	U	93
g-Chlordane	U	93
-a-Chlordane	U	93
Endosulfan (I)	U	93
p,p'-D D E	U	93
Dieldrin	U	93
Endrin	U	93
p,p'-D D D	U	93
Endosulfan (II)	U	93
p,p'-D D T	U	93
Endrin Aldehyde	U	93
Endosulfan Sulfate	U	93
Methoxychlor	U	93
Endrin Ketone	U	93
Toxaphene	U	2300
Aroclor 1016	U	1200
Aroclor 1221	U	2300
Aroclor 1232	U	1200
Aroclor 1242	U	1200
Aroclor 1248	150000	1200
Aroclor 1254	U	1200
Aroclor 1260	190000	1200

**REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022**

CHAIN OF CUSTODY RECORD

Project Name: W D
Project Number: 3304
RFW Contact: E McGuiren / G Newhart Phone: 732-321-42

No: 05832

SHEET NO. 1 OF 1

091198-

Sample Identification

Analyses Requested

Matrix:

SD - Sediment
DS - Drum Solids
DL - Drum Liquid
X - Other

PW - Potable Water
GW - Groundwater
SW - Surface Water
SI - Sludge

S - Soil
W - Water
O - Oil
A - Air

Special Instructions:

QA/QC 12-1

R Teag

Samples from coc# 09321 as per

E. McGovern (PA)

FOR SUBCONTRACTING USE ONLY

**FROM CHAIN OF
CUSTODY #**

Table 1.4 (Cont.) Results of the Analysis for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample No.	WBLK02388001	3304-0048	3304-0049	3304-0050	3304-0051
Sample Location	WD1002	B6	WD1005	WD1006	WAHS
GC/MS File Name	Weker	Water	Water	Water	Water
Dilution Factor	1	2	11	50	1
Compound Name	Conc. ppb	MDL ppb	Conc. ppb	MDL ppb	Conc. ppb
Phenol	10	7.2 J	20	110	10
bis(2-Chloroethyl)Ether	10	J	20	110	10
2-Chlorophenol	10	J	20	110	10
1,3-Dichlorobenzene	10	J	20	110	10
1,4-Dichlorobenzene	10	J	20	110	10
Benzyl alcohol	10	J	20	110	10
1,2-Dichlorobenzene	10	J	20	110	10
2-Methylphenol	10	J	20	110	10
bis(2-Chloroethyl)ether	10	J	20	110	10
4-Methylphenol	10	J	20	110	10
N-Nitroso-Di-n-propylamine	10	J	20	110	10
Heptachloroethane	10	J	20	110	10
Nitrobenzene	10	J	20	110	10
Isophorone	10	J	20	110	10
2-Nitrophenol	10	J	20	110	10
2,4-Dimethylphenol	10	J	20	110	10
bis(2-Chloroethyl)methane	10	J	20	110	10
2,4-Dichlorophenol	10	J	20	110	10
1,2,4-Trichlorobenzene	10	J	20	110	10
Naphthalene	10	J	20	110	10
4-Chloronaniline	10	J	20	110	10
Hexachlorobutadiene	10	J	20	110	10
4-Chloro-3-methylphenol	10	J	20	110	10
2-Methylnaphthalene	10	J	20	110	10
Hexachlorocyclopentadiene	10	J	20	110	10
2,4,6-Trichlorophenol	10	J	20	110	10
2,4,5-Trichlorophenol	10	J	20	110	10
2-Chloronaphthalene	10	J	20	110	10
2-Nitronaphthalene	10	J	20	110	10
Dimethylphthalate	10	J	20	110	10
Acenaphthylene	10	J	20	110	10
2,6-Dinitrotoluene	10	J	20	110	10
3-Nitronaphthalene	10	J	20	110	10
Acenaphthene	10	J	20	110	10
2,4-Dinitrophenol	10	J	20	110	10
4-Nitrophenol	10	J	20	110	10
Dibenzofuran	10	J	20	110	10
2,4-Dinitrotoluene	10	J	20	110	10
Diethylphthalate	10	J	20	110	10
4-Chlorophenyl-phenylether	10	J	20	110	10
Fluorene	10	J	20	110	10
4-Nitroaniline	10	J	20	110	10
4,6-Dinitro-2-methylphenol	10	J	20	110	10
N-Nitrosodiphenylamine	10	J	20	110	10
4-Bromophenyl-phenylether	10	J	20	110	10
Hexachlorobenzene	10	J	20	110	10
Pentachlorophenol	10	J	20	110	10
Phenanthrene	10	J	20	110	10
Anthracene	10	J	20	110	10
Carbazole	10	J	20	110	10
Di-n-butylphthalate	10	J	20	110	10
Fluoranthene	10	J	20	110	10
Pyrene	10	J	20	110	10
Butylbenzylphthalate	10	J	20	110	10
Benz(a)anthracene	10	J	20	110	10
3,3'-Dichlorobenzidine	10	J	20	110	10
Chrysene	10	J	20	110	10
Bis(2-Ethylhexyl)phthalate	10	J	20	110	10
Di-n-octylphthalate	10	J	20	110	10
Benz(b)fluoranthene	10	J	20	110	10
Benz(k)fluoranthene	10	J	20	110	10
Inden(1,2,3-cd)pyrene	10	J	20	110	10
Dibenzo(a,h)anthracene	10	J	20	110	10
Benz(g,h,i)perylene	10	J	20	110	10

Table 1.4 Results of the Analysis for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample No.	Wblk09149801	3304-0045		
Sample Location	Lab Blank	TRC's Large Baker Tank		
GC/MS File Name	WDI028	WDI031		
Matrix	Water	Water		
Dilution Factor	1	29		
Compound Name	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L
Phenol	U	10	5100	290
bis(-2-Chloroethyl)Ether	U	10	U	290
2-Chlorophenol	U	10	U	290
1,3-Dichlorobenzene	U	10	U	290
1,4-Dichlorobenzene	U	10	U	290
Benzyl alcohol	U	10	U	290
1,2-Dichlorobenzene	U	10	U	290
2-Methylphenol	U	10	1200	290
bis(2-Chloroisopropyl)ether	U	10	U	290
4-Methylphenol	U	10	5600	290
N-Nitroso-Di-n-propylamine	U	10	U	290
Hexachloroethane	U	10	U	290
Nitrobenzene	U	10	U	290
Isophorone	U	10	U	290
2-Nitrophenol	U	10	U	290
2,4-Dimethylphenol	U	10	2500	290
bis(2-Chlorooxy)methane	U	10	U	290
2,4-Dichlorophenol	U	10	U	290
1,2,4-Trichlorobenzene	U	10	U	290
Naphthalene	U	10	120 J	290
4-Chloronaphthalene	U	10	U	290
Hexachlorobutadiene	U	10	U	290
4-Chloro-3-methylphenol	U	10	U	290
2-Methylnaphthalene	U	10	370	290
Hexachlorocyclopentadiene	U	10	U	290
2,4,5-Trichlorophenol	U	10	U	290
2,4,5-Trichlorophenol	U	10	U	290
2-Chloronaphthalene	U	10	U	290
2-Nitroaniline	U	10	U	290
Dimethylphthalate	U	10	U	290
Acenaphthylene	U	10	U	290
2,6-Dinitrotoluene	U	10	U	290
3-Nitroaniline	U	10	U	290
Acenaphthene	U	10	U	290
2,4-Dinitrophenol	U	10	U	290
4-Nitrophenol	U	10	U	290
Dibenzofuran	U	10	U	290
2,4-Dinitrotoluene	U	10	U	290
Diethylphthalate	U	10	U	290
4-Chlorophenyl-phenylether	U	10	U	290
Fluorene	U	10	100 J	290
4-Nitroaniline	U	10	U	290
4,6-Dinitro-2-methylphenol	U	10	U	290
N-Nitrosodiphenylamine	U	10	U	290
4-Bromophenyl-phenylether	U	10	U	290
Hexachlorobenzene	U	10	U	290
Pentachlorophenol	U	10	U	290
Phenanthrene	U	10	170 J	290
Anthracene	U	10	120 J	290
Carbazole	U	10	U	290
Di-n-butylphthalate	U	10	U	290
Fluoranthene	U	10	U	290
Pyrene	U	10	U	290
Butylbenzylphthalate	U	10	U	290
Benz(a)anthracene	U	10	U	290
3,3'-Dichlorobenzidine	U	10	U	290
Chrysene	U	10	U	290
Bis(2-Ethylhexyl)phthalate	U	10	750	290
Di-n-octylphthalate	U	10	U	290
Benz(b)fluoranthene	U	10	U	290
Benz(k)fluoranthene	U	10	U	290
Benz(a)pyrene	U	10	U	290
Indeno(1,2,3-cd)pyrene	U	10	U	290
Dibenzo(a,h)anthracene	U	10	U	290
Benzo(g,h,i)perylene	U	10	U	290

Table 1.4 (Cont.) Results of the Analysis for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample No.	3304-0052	3304-0053	3304-0054	3304-0055	3304-0056
Sample Location	H8	H7	J7	C8	C5
GC/MS File Name	WDI009	WDI010	WDI011	WDI012	WDI013
Matrix	Water	Water	Water	Water	Water
Dilution Factor	5	5	5	2	50
Compound Name	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L	Conc. µg/L
Phenol	U	50	U	50	20
bis(2-Chloroethyl)Ether	U	50	U	50	600
2-Chlorophenol	U	50	U	50	500
1,3-Dichlorobenzene	U	50	U	50	500
1,4-Dichlorobenzene	U	50	U	50	500
Benzyl alcohol	U	50	U	50	500
1,2-Dichlorobenzene	U	50	U	50	500
2-Methylphenol	U	50	U	50	500
bis(2-Chloroisopropyl)ether	U	50	U	50	500
4-Methylphenol	U	50	U	24 J	170
N-Nitroso-Di-n-propylamine	U	50	U	50	680
Hexachloroethane	U	50	U	50	500
Nitrobenzene	U	50	U	50	500
Isophorone	U	50	U	50	500
2-Nitrophenol	U	50	U	50	500
2,4-Dimethylphenol	U	50	U	50	550
bis(2-Chloroethoxy)methane	U	50	U	50	500
2,4-Dichlorophenol	U	50	U	50	500
1,2,4-Trichlorobenzene	U	50	U	50	500
Naphthalene	U	50	U	15 J	48
4-Chloroaniline	U	50	U	50	500
Hexachlorobutadiene	U	50	U	50	500
4-Chloro-3-methylphenol	U	50	U	50	500
2-Methylnaphthalene	U	50	U	50	500
Hexachlorocyclopentadiene	U	50	U	50	500
2,4,6-Trichlorophenol	U	50	U	50	500
2,4,5-Trichlorophenol	U	50	U	50	500
2-Chloronaphthalene	U	50	U	50	500
2-Nitroaniline	U	50	U	50	500
Dimethylphthalate	U	50	U	50	500
Acenaphthylene	U	50	U	50	500
2,6-Dinitrotoluene	U	50	U	50	500
3-Nitroaniline	U	50	U	50	500
Acenaphthene	U	50	U	50	500
2,4-Dinitrophenol	U	50	U	50	500
4-Nitrophenol	U	50	U	50	500
Dibenzofuran	U	50	U	50	500
2,4-Dinitrotoluene	U	50	U	50	500
Diethylphthalate	U	50	U	50	500
4-Chlorophenyl-phenylether	U	50	U	50	500
Fluorene	U	50	U	50	500
4-Nitroaniline	U	50	U	50	500
4,6-Dinitro-2-methylphenol	U	50	U	50	500
N-Nitrosodiphenylamine	U	50	U	50	500
4-Bromophenyl-phenylether	U	50	U	50	500
Hexachlorobenzene	U	50	U	50	500
Pentachlorophenol	U	50	U	50	500
Phenanthrene	U	50	U	50	180 J
Anthracene	U	50	U	50	500
Carbazole	U	50	U	50	500
Di-n-butylphthalate	U	50	U	50	500
Fluoranthene	U	50	U	50	500
Pyrene	U	50	U	50	500
Butylbenzylphthalate	U	50	U	50	500
Benzo(a)anthracene	U	50	U	50	500
3,3'-Dichlorobenzidine	U	50	U	50	500
Chrysene	U	50	U	50	500
Bis(2-Ethylhexyl)phthalate	14 J	50	U	16 J	50
Di-n-octylphthalate	U	50	U	50	500
Benzo(b)fluoranthene	U	50	U	50	500
Benzo(k)fluoranthene	U	50	U	50	500
Benzo(a)pyrene	U	50	U	50	500
Indeno(1,2,3-cd)pyrene	U	50	U	50	500
Dibenzo(a,h)anthracene	U	50	U	50	500
Benzo(g,h,i)perylene	U	50	U	50	500

**Table 1.4 (Cont.) Results of the Analysis for BNA in Water
WA # 3-304 Waste Disposal, Inc.**

Sample No.	3304-0057	3304-0058		
Sample Location	E3	C4		
GC/MS File Name	WDI014	WDI015		
Matrix	Water	Water		
Dilution Factor	2	50		
Compound Name	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L
Phenol	180	20	U	500
bis(-2-Chloroethyl)Ether	U	20	U	500
2-Chlorophenol	U	20	U	500
1,3-Dichlorobenzene	U	20	U	500
1,4-Dichlorobenzene	U	20	U	500
Benzyl alcohol	U	20	U	500
1,2-Dichlorobenzene	U	20	U	500
2-Methylphenol	20	20	U	500
bis(2-Chloroisopropyl)ether	U	20	U	500
4-Methylphenol	650	20	U	500
N-Nitroso-Di-n-propylamine	U	20	U	500
Hexachloroethane	U	20	U	500
Nitrobenzene	U	20	U	500
Isophorone	U	20	U	500
2-Nitrophenol	U	20	U	500
2,4-Dimethylphenol	55	20	U	500
bis(2-Chloroethoxy)methane	U	20	U	500
2,4-Dichlorophenol	U	20	U	500
1,2,4-Trichlorobenzene	U	20	U	500
Naphthalene	18 J	20	620	500
4-Chloroaniline	U	20	U	500
Hexachlorobutadiene	U	20	U	500
4-Chloro-3-methylphenol	U	20	U	500
2-Methylnaphthalene	16 J	20	810	500
Hexachlorocyclopentadiene	U	20	U	500
2,4,6-Trichlorophenol	U	20	U	500
2,4,5-Trichlorophenol	U	20	U	500
2-Chloronaphthalene	U	20	U	500
2-Nitroaniline	U	20	U	500
Dimethylphthalate	U	20	U	500
Acenaphthylene	U	20	U	500
2,6-Dinitrotoluene	U	20	U	500
3-Nitroaniline	U	20	U	500
Acenaphthene	U	20	U	500
2,4-Dinitrophenol	U	20	U	500
4-Nitrophenol	U	20	U	500
Dibenzofuran	U	20	U	500
2,4-Dinitrotoluene	U	20	U	500
Diethylphthalate	U	20	U	500
4-Chlorophenyl-phenylether	U	20	U	500
Fluorene	U	20	U	500
4-Nitroaniline	U	20	U	500
4,6-Dinitro-2-methylphenol	U	20	U	500
N-Nitrosodiphenylamine	U	20	U	500
4-Bromophenyl-phenylether	U	20	U	500
Hexachlorobenzene	U	20	U	500
Pentachlorophenol	U	20	U	500
Phenanthrene	U	20	300 J	500
Anthracene	U	20	U	500
Carbazole	U	20	U	500
Di-n-butylphthalate	U	20	U	500
Fluoranthene	U	20	U	500
Pyrene	U	20	120 J	500
Butylbenzylphthalate	U	20	U	500
Benzo(a)anthracene	U	20	U	500
3,3'-Dichlorobenzidine	U	20	U	500
Chrysene	U	20	U	500
Bis(2-Ethylhexyl)phthalate	U	20	U	500
Di-n-octylphthalate	U	20	U	500
Benzo(b)fluoranthene	U	20	U	500
Benzo(k)fluoranthene	U	20	U	500
Benzo(a)pyrene	U	20	U	500
Indeno(1,2,3-cd)pyrene	U	20	U	500
Dibenzo(a,h)anthracene	U	20	U	500
Benzo(g,h,i)perylene	U	20	U	500

Table 1.5 Results of TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample #	WBLK09149801	Con. Factor	1.0
LabFile#	WDI028	Conc.**	µg/L
1	Unknown alkene/cycloalkane	13.09	5
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

* * Estimated Concentration (Response Factor = 1)

Table 1.5 (Cont.) Results of TIC for BNA in Water
WA # 3-304 WDI Site

Sample #	3304-0046	Con. Factor	29
LabFile#	WDI031		
		Conc.**	
		µg/L	
1	001120-21-4 Undecane	95 5.66	1100
2	000620-17-7 Phenol, 3-ethyl-	90 6.24	1100
3	Possible phenyl-propanedioic acid	6.85	2400
4	Dimethyl-alkane isomer	6.97	1300
5	00629-50-5 Tridecane	96 7.16	1000
6	Alkane	7.70	1500
7	Alkane	8.26	2200
8	00629-62-9 Pentadecane	96 8.50	1700
9	Possible 2,5-dimethyl-benzenebutanoic acid	9.02	1500
10	Alkane	9.11	2100
11	000615-22-5 Benzothiazole, 2-(methylthio)-	99 9.50	1200
12	00629-78-7 Heptadecane	98 9.69	1700
13	Alkane	9.73	2700
14	000934-34-9 2(3H)-Benzothiazolone	97 9.82	2100
15	Alkane	10.24	1400
16	Alkane	10.30	1700
17	Alkane	10.76	1100
18	Alkane	11.27	1600
19	Possible 2,2'-dithiobis-benzothiazole	11.47	4600
20	Alkane	11.74	1100

** Estimated Concentration (Response Factor = 1)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # **WBLK08269801**

LabFile # **WDI002**

Con. Factor

]

Conc **
 µg/L

	CAS#	Compound	Q	RT	Conc ** µg/L
1		Unknown		12.18	4.8
2		Unknown		13.13	9.0
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0048

LabFile # WDI005

Con. Factor

2

	CAS#	Compound	Q	RT	Conc ** μg/L
1		Dimethyl benzene isomer		4.09	65
2		Trimethyl benzene isomer		5.20	53
3		Dimethyl phenol isomer + Unknown		5.84	77
4		Unknown		6.70	58
5		Unknown		6.88	49
6		Unknown		6.97	180
7		Unknown		7.16	65
8		Unknown		7.52	130
9		Unknown		7.68	84
10		Unknown		7.73	63
11		Unknown		8.04	63
12		Unknown		8.15	48
13		Unknown		8.19	47
14		Unknown		8.25	75
15		Unknown		8.93	47
16		Unknown		9.03	84
17		Unknown		9.08	47
18		Unknown		9.29	88
19		Unknown		9.42	50
20		Unknown acid		9.93	67

**Estimated Concentration (Response Factor = 1.0)

Table 1.5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0049

LabFile # WDI006

Con. Factor

11.11

	CAS#	Compound	Q	RT	Conc ** µg/L
1		Unknown carboxylic acid		3.62	340
2		Unknown carboxylic acid + Unknown		6.19	420
3		Unknown		6.25	640
4		Unknown		6.69	250
5		Unknown acid		6.90	2600
6		Unknown		6.95	310
7		Methyl benzoic acid isomer		7.16	4300
8	000501-52-0	Benzene propanoic acid	93	7.53	320
9		Methyl naphthalene isomer		7.57	470
10		Unknown Aromatic		7.94	1200
11		Unknown Aromatic		8.20	360
12		Alkane		8.28	270
13		Unknown carboxylic acid		9.13	6200
14		Methyl benzamide isomer + Unknown		9.52	590
15		Alkane		9.76	380
16	000934-34-9	2 (3H)-Benzothiazolone	97	9.85	320
17		Unknown carboxylic acid		10.09	240
18		Unknown		11.34	3400
19		Unknown		11.76	480
20		Phenanthrenecarboxylic acid isomer		13.92	290

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0050

LabFile # WDI007

Con. Factor

50

	CAS#	Compound	Q	RT	Conc ** µg/L
1		Dimethyl benzene isomer		3.88	620
2	000090-05-1	2-Methoxy-phenol	93	5.71	660
3		Dimethyl -phenol isomer		6.27	750
4		Unknown		6.48	670
5	000103-82-2	Benzeneacetic acid	86	6.85	2100
6		Methyl-benzoic acid		7.11	9700
7		Terpin + methyl naphthalene isomer		7.56	370
8		Unknown Aromatic		7.92	4700
9		Unknown Aromatic		8.18	1000
10		Alkane		8.28	380
11		Unknown		8.63	380
12		Dimethyl -benzenebutanoic acid isomer		9.09	23000
13		Alkane		9.14	480
14		Alkane + unknown		9.42	360
15		Unknown		9.52	1600
16	000934-34-9	2 (3H) -Benzothiazolone	96	9.83	410
17		Unknown		10.47	430
18		Unknown		11.33	14000
19		Unknown		11.43	14000
20		Unknown		11.75	1000

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0051

LabFile # WDI008

Con. Factor

1

	CAS#	Compound	Q	RT	Conc ** μg/L
1		Unknown		11.04	9.9
2		Unknown		12.18	6.9
3		Unknown		13.13	13
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0052

LabFile # WDI009

Con. Factor

5

	CAS#	Compound	Q	RT	Conc ** µg/L
1		Unknown		3.63	20
2		Unknown		6.89	23
3		Alkane		6.98	20
4		Unknown		8.22	41
5		Alkane		8.29	30
6		Unknown		8.63	23
7		Unknown		9.03	24
8		Alkane		9.13	24
9		Alkane		9.43	26
10		Alkane		10.34	28
11		Unknown acid		11.13	36
12					
13					
14					
15					
16					
17					
18					
19					
20					

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0055

LabFile # WDI012

Con. Factor

2

	CAS#	Compound	Q	RT	Conc ** μg/L
1		Unknown carboxylic acid		3.62	320
2		Unknown carboxylic acid		3.67	120
3		Dimethyl -phenol isomer		6.27	130
4	000103-82-2	Benzeneacetic acid	86	6.93	460
5		Unknown		6.98	130
6		Unknown		7.04	75
7		Unknown		7.17	73
8	000120-72-9	Indole	91	7.36	59
9		Unknown		7.50	70
10	000501-52-0	Benzenepropanoic acid	91	7.55	65
11		Unknown		8.07	170
12	004593-90-2	3-Phenylbutyric acid	94	8.23	98
13		Unknown		8.45	73
14		Unknown		8.91	61
15		Unknown carboxylic acid		9.09	150
16		Unknown		9.42	98
17	000934-34-9	2 (3H) -Benzothiazolone	97	9.87	180
18		Unknown carboxylic acid		9.94	63
19	000149-30-4	2-mercaptopbenzothiazole	97	11.50	58
20		Unknown carboxylic acid		13.94	160

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0056

LabFile # WDI013

Con. Factor

50

	CAS#	Compound	Q	RT	Conc ** μg/L
1		Alkane		4.32	1200
2		Alkyl benzene + unknown		4.65	1300
3		Alkane		4.86	1500
4		Alkane		5.05	1500
5		Alkane		5.67	3700
6		Alkane		6.98	1300
7		Methyl benzoic acid isomer		7.07	2600
8		Alkane		7.72	1400
9		Alkane		7.87	1800
10		Unknown Aromatic		7.90	1600
11		Alkane		8.29	2200
12		Alkane		8.52	1500
13		Unknown carboxylic acid		9.04	2800
14		Alkane		9.13	1900
15		Alkane		9.72	1700
16		Alkane		9.75	2300
17		Alkane		10.27	1300
18		Alkane		10.34	1700
19		Alkane		11.30	2200
20		Unknown		11.40	2500

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample #	3304-0057	LabFile #	WDI014 <th>Con. Factor</th> <td>2</td> <th>Conc **</th>	Con. Factor	2	Conc **
	CAS#	Compound		Q	RT	μg/L
1		Unknown carboxylic acid			3.65	180
2		Unknown carboxylic acid			4.37	140
3		Unknown carboxylic acid			4.62	98
4		Alkyl benzene + unknown			5.21	110
5		Unknown			5.87	49
6		Unknown + Dimethyl phenol isomer			6.27	84
7		Unknown			6.51	54
8	000103-82-2	Benzeneacetic acid	90		6.94	340
9		Unknown			6.99	61
10		Unknown			7.05	55
11		Unknown			7.18	140
12	000501-52-0	Benzene propanoic acid	96		7.58	230
13		Unknown			7.69	44
14		Unknown			8.05	53
15		Unknown			8.08	51
16		Unknown			8.16	49
17		Unknown			8.64	60
18		Unknown			9.26	77
19	000934-34-9	2 (3H) -Benzothiazolone	93		9.87	72
20		Unknown carboxylic acid			11.14	41

**Estimated Concentration (Response Factor = 1.0)

Table 1.5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample #	3304-0058	Con. Factor	50		
LabFile #	WDI015	Conc. **	μg/L		
	CAS#	Compound	Q	RT	
1		Cycloalkane		3.61	1800
2		Alkane		4.32	1800
3		Cycloalkane		4.39	1300
4		Cycloalkane		4.65	1300
5		Alkane		5.05	1900
6		Decahydro -naphthalene isomer		5.54	890
7		Cycloalkane		5.66	2500
8		Methylindene isomer + unknown		5.75	1200
9		Alkane		6.98	1900
10		Methyl naphthalene isomer		7.57	1200
11		Alkane		7.72	2700
12		Alkane		8.29	3000
13		Alkane + trimethyl naphthalene isomer		9.13	1100
14		Alkane		9.72	920
15		Alkane		9.75	4500
16		Alkane		10.33	3200
17		Alkane		10.77	930
18		Alkane		11.30	1000
19		Alkane		11.67	890
20		Alkane		11.77	1100

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0053

LabFile # WDI010

Con. Factor

5

	CAS#	Compound	Q	RT	Conc ** μg/L
1		Alkyl benzene		5.21	47
2		Unknown		5.68	48
3		Unknown		6.18	52
4		Unknown		6.27	86
5		Unknown		6.40	53
6		Unknown		6.84	60
7		Unknown		6.92	130
8		Unknown		7.11	97
9		Unknown		7.25	51
10		Unknown		7.39	130
11		Unknown		7.64	69
12		Unknown		7.69	52
13		Unknown		7.81	66
14		Unknown		7.99	67
15		Unknown		8.03	48
16		Unknown		8.25	92
17		Dimethyl naphthalene isomer + Unknown		8.31	110
18		Unknown		8.50	130
19		Unknown		8.90	88
20		Unknown		9.52	60

**Estimated Concentration (Response Factor = 1.0)

Table 1. 5 (Cont.) Results of the TIC for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample # 3304-0054

LabFile # WDI011

Con. Factor

5

	CAS#	Compound	Q	RT	Conc ** µg/L
1		Unknown		3.64	56
2		Unknown		5.81	51
3		Unknown		6.26	51
4		Unknown		6.40	46
5		Unknown acid		6.85	89
6		Unknown		6.92	81
7		Alkane		6.98	61
8		Unknown		7.12	70
9		Unknown		7.38	61
10		Unknown		7.62	55
11		Unknown		7.68	42
12		Unknown		7.97	53
13		Unknown		8.24	120
14		Alkane		8.29	78
15		Unknown Aromatic		8.35	56
16		Unknown		8.59	41
17		Unknown Aromatic		9.04	60
18		Alkane		10.33	55
19		Unknown		11.30	44
20		Unknown		11.40	52

**Estimated Concentration (Response Factor = 1.0)

Table 1.6 Results of the Analysis for Metals in Soil
WA # 3-304 Waste Disposal, Inc.
Results Based on Dry Weight

Client ID Location % Solids	Method Blank Lab NA	A15801 AREA7 - 10 ft.		A15820 AREA 5 - 3 ft.		A15821 AREA 5 - 10 ft.		A15822 AREA 4 - 3 ft.		A15823 AREA 4 - 10 ft.		
		Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	
Parameter	Analysis Method	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	
Aluminum	ICAP	U 18	14000	23	11000	19	15000	22	11000	19	16000	25
Antimony	ICAP	U 6.0	U	7.7	U	6.3	U	7.3	U	6.4	U	8.5
Arsenic	AA-Fur	U 0.50	6.5	0.62	4.9	0.53	11	1.4	5.5	1.1	9.6	1.5
Banum	ICAP	U 1.0	580	1.3	170	1.1	730	1.2	2200	1.1	830	1.4
Beryllium	ICAP	U 0.50	U	0.64	U	0.53	U	0.61	U	0.53	U	0.71
Cadmium	ICAP	U 0.50	U	0.64	U	0.53	1.8	0.61	U	0.53	1.6	0.71
Calcium	ICAP	U 50	14000	64	8400	53	19000	61	9400	53	28000	71
Chromium	ICAP	0.57 0.50	30	0.64	27	0.53	34	0.61	19	0.53	88	0.71
Cobalt	ICAP	U 1.0	12	1.3	11	1.1	15	1.2	11	1.1	16	1.4
Copper	ICAP	U 1.0	56	1.3	28	1.1	64	1.2	44	1.1	65	1.4
Iron	ICAP	U 10	27000	13	20000	11	25000	12	19000	11	30000	14
Lead	ICAP	U 4.0	39	5.1	9.2	4.2	24	4.9	34	4.2	120	5.6
Magnesium	ICAP	U 50	7300	64	6300	53	9100	61	5700	53	11000	71
Manganese	ICAP	U 1.0	370	1.3	290	1.1	340	1.2	320	1.1	360	1.4
Mercury	Cold Vapor	U 0.04	0.81	0.05	0.11	0.04	0.2	0.06	0.14	0.03	0.31	0.06
Nickel	ICAP	U 1.0	34	1.3	16	1.1	26	1.2	16	1.1	32	1.4
Potassium	ICAP	U 200	3600	260	2800	210	3900	240	3100	210	4400	280
Selenium	AA-Fur	U 0.50	U	0.62	U	0.53	U	0.68	U	0.53	U	0.73
Silver	ICAP	U 0.50	U	0.64	U	0.53	U	0.61	U	0.53	U	0.71
Sodium	ICAP	U 50	1300	64	410	53	2200	61	330	53	2200	71
Thallium	AA-Fur	U 0.50	U	0.62	U	0.53	U	0.68	U	0.53	U	0.73
Vanadium	ICAP	U 2.0	45	2.6	35	2.1	44	2.4	33	2.1	51	2.8
Zinc	ICAP	3.1 2.0	190	2.6	120	2.1	780	2.4	130	2.1	590	2.8

**Table 1.6 (Cont.) Results of the Analysis for Metals in Soil
WA # 3-304 Waste Disposal, Inc.
Results Based on Dry Weight**

Client ID Location % Solids	Analysis Method	A15824		A15825		A15826		A15827	
		C&E DIE - 3 ft.	98	C&E DIE - 10 ft.	60	AREA 2 - 3 ft.	91	AREA 2 - 10 ft.	63
Parameter		Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg	Conc mg/kg	MDL mg/kg
Aluminum	ICAP	5600	17	9700	19	9300	18	10000	20
Antimony	ICAP	U	5.7	U	6.5	U	5.8	U	6.6
Arsenic	AA-Fur	3.9	0.47	4.8	0.62	6.3	0.96	14	0.55
Barium	ICAP	81	0.96	460	1.1	340	0.97	770	1.1
Beryllium	ICAP	U	0.48	U	0.54	U	0.49	U	0.55
Cadmium	ICAP	U	0.48	1.1	0.54	0.78	0.49	1.5	0.55
Calcium	ICAP	2700	48	29000	54	8400	49	34000	55
Chromium	ICAP	8.3	0.48	20	0.54	16	0.49	38	0.55
Cobalt	ICAP	6.2	0.96	7.6	1.1	7.6	0.97	7.9	1.1
Copper	ICAP	54	0.96	45	1.1	42	0.97	32	1.1
Iron	ICAP	11000	9.6	18000	11	15000	9.7	16000	11
Lead	ICAP	43	3.8	73	4.3	1100	3.9	140	4.4
Magnesium	ICAP	3700	48	8200	54	4500	49	5000	55
Manganese	ICAP	250	0.96	250	1.1	250	0.97	280	1.1
Mercury	Cold Vapor	0.08	0.04	0.11	0.06	0.15	0.04	0.16	0.05
Nickel	ICAP	18	0.96	33	1.1	14	0.97	15	1.1
Potassium	ICAP	1600	190	2900	220	2600	190	2800	220
Selenium	AA-Fur	U	0.47	U	0.62	U	0.48	U	0.55
Silver	ICAP	U	0.48	U	0.54	U	0.49	U	0.55
Sodium	ICAP	110	48	2700	54	720	49	1900	55
Thallium	AA-Fur	U	0.47	U	0.62	U	0.48	U	0.55
Vanadium	ICAP	26	1.9	36	2.2	32	1.9	33	2.2
Zinc	ICAP	68	1.9	110	2.2	190	1.9	340	2.2

Table 1.7 Results of the Analysis for Pesticide/PCB in Water
WA# 3-304 Waste Disposal, Inc.

Client ID Location	WBLK09119801		3304-0046	
	Conc. μg/L	MDL μg/L	TRC's Large Baker Tank	
Analyte			Conc. μg/L	MDL μg/L
a-BHC	U	0.02	U	0.10
g-BHC	U	0.02	U	0.10
b-BHC	U	0.02	U	0.10
Heptachlor	U	0.02	U	0.10
d-BHC	U	0.02	U	0.10
Aldrin	U	0.02	U	0.10
Heptachlor Epoxide	U	0.02	U	0.10
g-Chlordane	U	0.02	U	0.10
a-Chlordane	U	0.02	U	0.10
Endosulfan (I)	U	0.02	U	0.10
p,p'-D D E	U	0.02	U	0.10
Dieldrin	U	0.02	U	0.10
Endrin	U	0.02	U	0.10
p,p'-D D D	U	0.02	U	0.10
Endosulfan (II)	U	0.02	U	0.10
p,p'-D D T	U	0.02	U	0.10
Endrin Aldehyde	U	0.02	U	0.10
Endosulfan Sulfate	U	0.02	U	0.10
Methoxychlor	U	0.02	U	0.10
Endrin Ketone	U	0.02	U	0.10
Toxaphene	U	0.5	U	2.9
Aroclor 1016	U	0.3	U	1.5
Aroclor 1221	U	0.5	U	2.9
Aroclor 1232	U	0.3	U	1.5
Aroclor 1242	U	0.3	U	1.5
Aroclor 1248	U	0.3	46	1.5
Aroclor 1254	U	0.3	U	1.5
Aroclor 1260	U	0.3	57	1.5

QA/QC for BNA

Results of the Internal Standard Areas for BNA in Liquid Organic Waste

After the samples were diluted, an aliquot was spiked with an internal standards mixture consisting of 1,4-dichlorobenzene-d₄, naphthalene-d₈, acenaphthene-d₁₀, phenanthrene-d₁₀, chrysene-d₁₂, and perylene-d₁₂.

The internal standard areas are listed in Table 2.1. All 114 internal standard areas are within QC limits.

Results of the Internal Standard Areas for BNA in Water

Prior to extraction, each sample was spiked with a six component surrogate mixture consisting of nitrobenzene-d₅, 2-fluorobiphenyl, terphenyl-d₁₄, phenol-d₅, 2-fluorophenol, and 2,4,6-tribromophenol. After the extracts were combined and concentrated, they were spiked with an internal standards mixture consisting of 1,4-dichlorobenzene-d₄, naphthalene-d₈, acenaphthene-d₁₀, phenanthrene-d₁₀, chrysene-d₁₂, and perylene-d₁₂.

The internal standard areas are listed in Table 2.2. All 120 internal standard areas are within QC limits.

Results of the Surrogate Recoveries for BNA in Water

The reported surrogate percent recoveries, listed in Table 2.3, ranged from 18 to 151. One hundred and five out of 108 reported recoveries were within the acceptable QC limits. Twelve recoveries were not calculated because they were diluted out.

The surrogate recoveries for the liquid organic waste samples are not available because they were not spiked with surrogate solution.

Results of the BS/BSD Analysis for BNA in Water

The percent recoveries for the blank spike/blank spike duplicate (BS/BSD) analysis, listed in Table 2.4, ranged from 27 to 88. All 44 recoveries were within the QC limits. The relative percent differences (RPDs), also listed in Table 2.4, ranged from zero (0) to 14. All 22 RPDs were within the QC limits.

Table 2.1 Results of the Internal Standard Areas for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Analysis Date 08/20/98
 Matrix Soil

Sample No.	File ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
3304-0001	WEL024.D	115315	439889	240952	445604	394200	29670
SOLVENT BLANK	WEL027.D	100553	373530	199028	372538	321411	244072
3304-0002	WEL028.D	113684	416841	227789	421994	367471	277687
3304-0003	WEL029.D	116965	428810	229458	440143	372248	27933
3304-0004	WEL030.D	115457	436069	230903	444022	369436	28310
3304-0009	WEL031.D	109659	424506	228151	427269	361982	27728
3304-0013	WEL032.D	117819	448101	240056	453820	378384	28395
3304-0014	WEL033.D	122572	445874	240227	450165	381629	287182
3304-0015	WEL034.D	113587	442456	237174	448032	382123	28250
3304-0026	WEL035.D	121183	460725	247624	465434	382340	29262
3304-0027	WEL036.D	116442	450159	239935	443849	374328	281008
3304-0028	WEL037.D	118149	442120	235771	444275	376187	27502
3304-0037	WEL038.D	116573	449452	241999	446182	369591	27815
3304-0039	WEL039.D	123708	465616	251045	468729	387401	281363

Cal Check Area	WEL023.D	120141	459587	238997	399056	345771	29125
----------------	----------	--------	--------	--------	--------	--------	-------

- IS 1 = d4-Dichlorobenzene
- IS 2 = d8-Naphthalene
- IS 3 = d10-Acenaphthene
- IS 4 = d10-Phenanthrene
- IS 5 = d12-Chrysene
- IS 6 = d12-Perylene

00067

**Table 2.1 (Cont.) Results of the Internal Standard Areas for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.**

Analysis Date 08/21/98
Matrix Soil

Sample No.	File ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
3304-0040	WEL043.D	124154	457916	247709	463150	380689	299977
3304-0044	WEL044.D	121057	456553	242681	451993	369121	292614
3304-0045	WEL045.D	122454	443607	241213	441454	362346	277658

Cal Check Area	WEL042.D	136731	515280	264674	438249	358570	290935
----------------	----------	--------	--------	--------	--------	--------	--------

IS 1 = d4-Dichlorobenzene
 IS 2 = d8-Naphthalene
 IS 3 = d10-Acenaphthene
 IS 4 = d10-Phenanthrene
 IS 5 = d12-Chrysene
 IS 6 = d12-Perylene

**Table 2.1 (Cont.) Results of the Internal Standard Areas for BNA in Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.**

Analysis Date	09/16/98						
Matrix	Organic Waste						
Sample No.	File ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
BLK	WDI032.D	104704	398385	203387	371437	306758	237527
3304-0047	WDI034.D	114454	445488	231022	423260	341461	249495
Cal/Check Area	WDI027.D	120508	466051	232462	381139	299025	25062

IS 1 = d4-Dichlorobenzene
 IS 2 = d8-Naphthalene
 IS 3 = d10-Acenaphthene
 IS 4 = d10-Phenanthrene
 IS 5 = d12-Chrysene
 IS 6 = d12-Perylene

Table 2.2 Results of the Internal Standard Areas for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Analysis Date 09/16/98
Matrix water

Sample No.	File ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
WBLK09149801	WDI028.D	111030	409903	212506	381741	309197	229066
WBS09149801	WDI029.D	116334	435627	221754	399394	325832	241453
WBSD09149801	WDI030.D	117734	441607	223167	403498	325078	240468
3304-0046	WDI031.D	116768	477265	225126	410658	334210	250040

Cal Check Area	WDI027.D	120508	466051	232462	381139	299025	250628
----------------	----------	--------	--------	--------	--------	--------	--------

IS 1 = d4-Dichlorobenzene
 IS 2 = d8-Naphthalene
 IS 3 = d10-Acenaphthene
 IS 4 = d10-Phenanthrene
 IS 5 = d12-Chrysene
 IS 6 = d12-Perylene

Table 2.2 (Cont.) Results of the Internal Standard Areas for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Analysis Date 09/17/98
Matrix Water

Sample No.	File ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
3304-0046	WDI038.D	130892	509751	256666	477352	385486	290981

Cal Check Area	WDI037.D	146262	557150	286722	476711	378833	32001
-----------------------	-----------------	---------------	---------------	---------------	---------------	---------------	--------------

IS 1 = d4-Dichlorobenzene
 IS 2 = d8-Naphthalene
 IS 3 = d10-Acenaphthene
 IS 4 = d10-Phenanthrene
 IS 5 = d12-Chrysene
 IS 6 = d12-Perylene

Table 2.2 (Cont.) Results of the Internal Standard Areas for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Analysis Date **08/31/98**
Matrix **water**

Sample No.	File ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
WBLK08269801	WDI002.D	145746	545456	292959	530314	478078	380886
WBLK BS	WDI003.D	152869	567723	308791	554889	477105	389443
WBLK BSD	WDI004.D	145837	541741	293453	529526	458360	367972
3304-0048	WDI005.D	116298	455830	265239	431178	372633	303147
3304-0049	WDI006.D	155723	602935	316306	564258	479239	386158
3304-0050	WDI007.D	154277	593793	319586	570905	487931	383920
3304-0051	WDI008.D	131018	491852	273550	495903	417189	316581
3304-0052	WDI009.D	126051	465132	254230	455596	373542	287597
3304-0053	WDI010.D	121438	453700	242815	446151	359772	277391
3304-0054	WDI011.D	125937	468938	249839	457395	372793	283766
3304-0055	WDI012.D	131314	529297	268676	467394	369504	288741
3304-0056	WDI013.D	132017	492711	257249	468692	382350	283700
3304-0057	WDI014.D	134575	514241	276892	471864	381472	286896
3304-0058	WDI015.D	132864	496915	259911	480166	379318	289148

Cal Check Area	WDI001.D	110811	418286	217218	352338	310681	280013
-----------------------	-----------------	---------------	---------------	---------------	---------------	---------------	---------------

IS 1 = d4-Dichlorobenzene
IS 2 = d8-Naphthalene
IS 3 = d10-Acenaphthene
IS 4 = d10-Phenanthrene
IS 5 = d12-Chrysene
IS 6 = d12-Perylene

Table 2.2 (Cont.) Results of the Internal Standard Areas for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Analysis Date 09/01/98
 Matrix water

Sample No.	File ID	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6
3304-0057	WDI019.D	138105	523778	280969	502480	413255	312936

Cal Check Area	WDI018.D	144575	558480	286116	476521	380981	322617
----------------	----------	--------	--------	--------	--------	--------	--------

IS 1 = d4-Dichlorobenzene
 IS 2 = d8-Naphthalene
 IS 3 = d10-Acenaphthene
 IS 4 = d10-Phenanthrene
 IS 5 = d12-Chrysene
 IS 6 = d12-Perylene

Table 2.3 Results of the Surrogate Recoveries for BNA in water
WA # 3-304 Waste Disposal, Inc.

Analysis Date 09/16/98
Matrix water

Sample No.	File ID	Sur. 1	Sur. 2	Sur. 3	Sur. 4	Sur. 5	Sur. 6
WBLK09149801	WDI028.D	61	41	87	83	84	86
WBS09149801	WDI029.D	60	38	90	86	88	85
WBSD09149801	WDI030.D	55	35	91	90	89	87
3304-0046	WDI031.D	70	67	133 *	105	119	100

Surrogate Limits

		Water
Sur. 1	2-Fluorophenol	(21-110)
Sur. 2	Phenol-d5	(10-110)
Sur. 3	Nitrobenzene-d5	(35-114)
Sur. 4	2-Fluorobiphenyl	(43-116)
Sur. 5	2,4,6-Tribromophenol	(10-123)
Sur. 6	Terphenyl-d14	(33-141)

**Table 2.3 (Cont.) Results of the Surrogate Recoveries for BNA in water
WA # 3-304 Waste Disposal, Inc.**

Analysis Date 09/17/98
Matrix Water

Sample No.	File ID	Sur. 1	Sur. 2	Sur. 3	Sur. 4	Sur. 5	Sur. 6
3304-0046	WDI038.D	70	71	151 *	107	18	1C

Surrogate Limits

Water

Surr 1	2-Fluorophenol	(21-110)
Surr 2	Phenol-d5	(10-110)
Surr 3	Nitrobenzene-d5	(35-114)
Surr 4	2-Fluorobiphenyl	(43-116)
Surr 5	2,4,6-Tribromophenol	(10-123)
Surr 6	Terphenyl-d14	(33-141)

Table 2.3 (Cont.) Results of the Surrogate Recoveries for BNA in water
WA # 3-304 Waste Disposal, Inc.

Analysis Date 08/31/98
 Matrix water

Sample No.	File ID	Surr. 1	Surr. 2	Surr. 3	Surr. 4	Surr. 5	Surr. 6
WBLK08269801	WDI002.D	43	32	54	53	48	58
WBLK BS	WDI003.D	45	32	64	62	52	62
WBLK BSD	WDI004.D	41	30	58	59	49	62
3304-0048	WDI005.D	47	50	78	74	56	73
3304-0049	WDI006.D	40	31	105	75	68	70
3304-0050	WDI007.D	51	46	117 *	79	114	78
3304-0051	WDI008.D	58	50	75	74	66	70
3304-0052	WDI009.D	85	71	94	95	91	89
3304-0053	WDI010.D	68	50	85	87	83	86
3304-0054	WDI011.D	77	70	89	87	88	81
3304-0055	WDI012.D	48	35	75	73	47	74
3304-0056	WDI013.D	D	D	D	D	D	D
3304-0057	WDI014.D	70	64	91	84	76	84
3304-0058	WDI015.D	D	D	D	D	D	D

CLP Surrogate Limits

	Water
2-Fluorophenol	(21-110)
Phenol-d5	(10-110)
Nitrobenzene-d5	(35-114)
2-Fluorobiphenyl	(43-116)
2,4,6-Tribromophenol	(10-123)
Terphenyl-d14	(33-141)

Table 2.3 (Cont.) Results of the Surrogate Recoveries for BNA in water
WA # 3-304 Waste Disposal, Inc.

Analysis Date	09/01/98						
Matrix	water						
Sample No.	File ID	Sur. 1	Sur. 2	Sur. 3	Sur. 4	Sur. 5	Sur. 6
3304-0057	WDI019.D	85	60	104	89	115	91

CLP Surrogate Limits

	Water
2-Fluorophenol	(21-110)
Phenol-d5	(10-110)
Nitrobenzene-d5	(35-114)
2-Fluorobiphenyl	(43-116)
2,4,6-Tribromophenol	(10-123)
Terphenyl-d14	(33-141)

Table 2.4 Results of BS/BSD Analysis for BNA in Water
WA # 3-304 Waste Disposal, Inc.

Sample ID: WBLK091498

Compound Name	BS		BSD		BS Conc. ($\mu\text{g/L}$)	BSD Conc. ($\mu\text{g/L}$)	BS % Rec.	BSD % Rec.	QC Limits		
	Sample Conc. ($\mu\text{g/L}$)	Spike Added ($\mu\text{g/L}$)	Spike Added ($\mu\text{g/L}$)	BS Conc. ($\mu\text{g/L}$)	BSD Conc. ($\mu\text{g/L}$)				RPD	RPD	% Rec.
Phenol	U	100	100	39.8	37.1	40	37	7	42	12 -	110
2-Chlorophenol	U	100	100	83.9	83.8	84	84	0	40	27 -	123
1,4-Dichlorobenzene	U	50	50	33.4	34.6	67	69	4	28	36 -	97
N-Nitroso-Di-N-Propylamine	U	50	50	39.4	40.1	79	80	2	38	41 -	116
1,2,4-Trichlorobenzene	U	50	50	35.7	36.5	71	73	2	28	39 -	98
4-Chloro-3-Methylphenol	U	100	100	87.8	85.9	88	86	2	42	23 -	97
Acenaphthene	U	50	50	38.6	40.4	77	81	5	31	46 -	118
4-Nitrophenol	U	100	100	34.4	31.4	34	31	9	50	10 -	80
2,4-Dinitrotoluene	U	50	50	38.2	39.1	76	78	2	38	24 -	96
Pentachlorophenol	U	100	100	77.0	70.2	77	70	9	50	9 -	103
Pyrene	U	50	50	38.0	38.6	76	77	2	31	26 -	127

Table 2.4 (Cont.) Results of BS/BSD Analysis for BNA in Water
WA # 3-304 WDI Site

Sample ID: Water Blank #2

Compound Name	BS		BSD						QC Limits		
	Blank Conc. (µg/L)	Spike Added (µg/L)	Spike Added (µg/L)	BS Conc. (µg/L)	BSD Conc. (µg/L)	BS % Rec.	BSD % Rec.	RPD	RPD	% Re	
Phenol	U	100	100	32.6	31.5	33	32	3	42	12 -	
2-Chlorophenol	U	100	100	61.5	53.7	62	54	14	40	27 -	T23
1,4-Dichlorobenzene	U	50	50	25.3	24.3	51	49	4	28	36 -	87
N-Nitroso-Di-N-Propylamine	U	50	50	29.5	28.4	59	57	4	38	41 -	
1,2,4-Trichlorobenzene	U	50	50	28.1	26.1	56	52	7	28	39 -	
4-Chloro-3-Methylphenol	U	100	100	64.8	61.6	65	62	5	42	23 -	97
Acenaphthene	U	50	50	29.7	28.1	59	56	6	31	46 -	
4-Nitrophenol	U	100	100	27.1	27.3	27	27	1	50	10 -	
2,4-Dinitrotoluene	U	50	50	28.7	28.3	57	57	1	38	24 -	96
Pentachlorophenol	U	100	100	48.6	44.7	49	45	8	50	9 -	100
Pyrene	U	50	50	27.7	27.8	55	56	0	31	26 -	

QA/QC for Metals

Results of the OC Standard Analysis for Metals (Soil)

The QC standards ERA-434, QC-7x100, QC-21x100, TMWS, TMAA#1 and TMAA#2 were used to check the accuracy of the calibration curves. The percent recoveries for the metals found in the QC standards, listed in Table 2.5, ranged from 80 to 115. There are 95% confidence interval limits available for 19 of the 38 concentration recoveries. All 19 concentration recoveries are within the limits. There are no 95% confidence interval limits available for the remaining nineteen recoveries.

Results of the MS/MSD Analysis for Metals in Soil

Sample A18522 was chosen for matrix spike/matrix spike duplicate (MS/MSD) analysis. The reported percent recoveries, listed in Table 2.6, ranged from 15 to 118. The reported relative percent differences (RPDs), also listed in Table 2.6, ranged from 0 to 50. Twenty-eight out of 32 reported percent recoveries and 13 out of 16 reported RPDs were within QC limits. Two percent recoveries and one RPD were not calculated because the sample concentration was greater than four times the spike concentration of the metal.

Results of the Blank Spike Analysis for Metals in Soil

The percent recoveries for the blank spike metals, listed in Table 2.7, ranged from 90 to 120. All 23 recoveries were within QC limits.

Table 2.5 Results of the QC Standard Analysis for Metals (Soil)
WA # 3-304 Waste Disposal, Inc.

Metal	Date Analyzed	Quality Control Standard	Conc. Recovered µg/L	Certified Value µg/L	95 % Confidence Interval µg/L	% Recovery
Aluminum	09/22/98	QC-7 x100	1065	1000	NA 531-763	107
	09/22/98	ERA-434	730	647		113
Antimony	09/22/98	QC-21 x100	1014	1000	NA	101
Arsenic	09/21/98	TMAA #1	50	50	41.9-55.9	100
	09/21/98	TMAA #1	52.5	50	41.9-55.9	105
Barium	09/22/98	QC-7 x100	983	1000	NA 603 - 867	98
	09/22/98	ERA-434	739	735		101
Beryllium	09/22/98	QC-21 x100	1013	1000	NA 68 - 97	101
	09/22/98	ERA-434	87.6	82		107
Cadmium	09/22/98	QC-21 x100	1010	1000	NA 63 - 90	101
	09/22/98	ERA-434	82.7	77		107
Calcium	09/22/98	QC-21 x100	1041	1000	NA	104
Chromium	09/22/98	QC-21 x100	1038	1000	NA 87 - 125	104
	09/22/98	ERA-434	113	106		107
Cobalt	09/22/98	QC-21 x100	1032	1000	NA 72 - 104	103
	09/22/98	ERA-434	96.8	88		110
Copper	09/22/98	QC-21 x100	999	1000	NA 121 - 173	100
	09/22/98	ERA-434	156	147		106
Iron	09/22/98	QC-21 x100	1049	1000	NA 169 - 243	105
	09/22/98	ERA-434	228	206		111
Lead	09/22/98	QC-21 x100	1028	1000	NA 77 - 111	103
	09/22/98	ERA-434	108	94		115
Magnesium	09/22/98	QC-21 x100	1015	1000	NA	101
Manganese	09/22/98	QC-21 x100	1015	1000	NA 193 - 277	101
	09/22/98	ERA-434	250	235		106
Mercury	09/23/98	TMWS	2.4	3	2.21 - 3.65	80
Nickel	09/22/98	QC-21 x100	1043	1000	NA 92 - 132	104
	09/22/98	ERA-434	126	112		113
Potassium	09/22/98	QC-7 x100	9086	10000	NA	91
Selenium	09/18/98	TMAA #1	47.55	50	39.4-57.4	95
Silver	09/22/98	QC-7 x100	985	1000	NA 72 - 104	99
	09/22/98	ERA-434	88	88		100
Sodium	09/22/98	QC-7 x100	1042	1000	NA	104
Thallium	09/21/98	TMAA #2	49.5	50	39.9-57.97	99
Vanadium	09/22/98	QC-21 x100	1011	1000	NA 97 - 139	101
	09/22/98	ERA-434	125	118		106
Zinc	09/22/98	QC-21 x100	1042	1000	NA 217 - 313	104
	09/22/98	ERA-434	285	265		106

**Table 2.6 Results of the MS/MSD Analysis for Metals in Soil
WA # 3-304 Waste Disposal, Inc.
Results Based on Dry Weight**

Metal	Client #	Sample Conc. mg/kg	Spike Added MS mg/kg	Spike Added MSD mg/kg	Recovered Conc. MS mg/kg	Recovered Conc. MSD mg/kg	% Recovery MS	% Recovery MSD	RPD	Recommended QC Limits %Rec	RPD
Antimony	A18522	U	51.0	51.0	12.8	7.65	25 *	15 *	50 *	75-125	20
Arsenic	A18522	5.49	5.20	5.20	11.6	10.8	118	102	14	75-125	20
Barium	A18522	2199	102	102	1838	2847	NC	NC	NC	75-125	20
Beryllium	A18522	U	51.0	51.0	51.5	52.3	101	103	2	75-125	20
Cadmium	A18522	U	51.0	51.0	48.3	49.3	95	97	2	75-125	20
Chromium	A18522	19.4	51.0	51.0	68.5	69.8	96	99	3	75-125	20
Cobalt	A18522	11.1	51.0	51.0	59.4	61.4	95	99	4	75-125	20
Copper	A18522	44.4	51.0	51.0	85.8	90.6	81	81	11	75-125	20
Lead	A18522	34.1	51.0	51.0	82.5	81.3	95	93	3	75-125	20
Manganese	A18522	321	51.0	51.0	361	381	78	118	40 *	75-125	20
Mercury	A18522	0.139	0.400	0.400	0.52	0.52	95	95	0	75-125	20
Nickel	A18522	15.8	51.0	51.0	64.5	65.7	96	98	2	75-125	20
Selenium	A18522	U	5.20	5.20	3.69	3.78	71 *	73 *	2	75-125	20
Silver	A18522	U	51.0	51.0	47	48.1	92	94	2	75-125	20
Thallium	A18522	U	5.20	5.20	4.56	4.2	88	81	8	75-125	20
Vanadium	A18522	33.1	102	102	132	134	97	99	2	75-125	20
Zinc	A18522	129	51.0	51.0	167	178	75	96	25 *	75-125	20

**Table 2.7 Results of the Blank Spike Analysis for Metals in Soil
WA # 3-304 Waste Disposal, Inc.**

Metal	Spiked Conc. mg/kg	Sand Blank Conc. mg/kg	Recovered Conc. mg/kg	% Recovery	Recommended QC Limits
Aluminum	800	18.3	851	104	75-125
Antimony	50.0	U	48.4	97	75-125
Arsenic	5.00	U	5.29	106	75-125
Barium	100	U	97.7	98	75-125
Beryllium	50.0	U	52.6	105	75-125
Cadmium	50.0	U	49.4	99	75-125
Calcium	800	U	963	120	75-125
Chromium	50.0	U	51.7	103	75-125
Cobalt	50.0	U	51.4	103	75-125
Copper	50.0	U	49.9	100	75-125
Iron	800	U	831	104	75-125
Lead	50.0	U	50	100	75-125
Magnesium	800	U	821	103	75-125
Manganese	50.0	U	50.8	102	75-125
Mercury	0.392	NA	0.392	100	75-125
Nickel	50.0	U	52.1	104	75-125
Potassium	800	U	734	92	75-125
Selenium	5.00	U	4.82	96	75-125
Silver	50.0	U	48.1	96	75-125
Sodium	800	U	794	99	75-125
Thallium	5.00	U	4.48	90	75-125
Vanadium	100	U	101	101	75-125
Zinc	50.0	4.12	56	104	75-125

QA/QC for Pesticide/PCB

Results of the Surrogate Recoveries for Pesticide/PCB in Water

The surrogate percent recoveries, listed in Table 2.8, ranged from 42 to 117. Six out of eight recoveries are within QC limits.

Results of the BS/BSD Analysis for Pesticide/PCB in Water

The percent recoveries for the blank spike/blank spike duplicate (BS/BSD), listed in Table 2.9, ranged from 30 to 102. Ten out of 12 recoveries are within QC limits. The relative percent differences (RPDs), also listed in Table 2.9, ranged from 6 to 17. All 6 RPD values are within QC limits.

**Table 2.8 Results of the Surrogate Recoveries
for Pesticide/PCB in Water
WA# 3-304 Waste Disposal, Inc.**

Sample ID	Percent Recovery	
	TCMX	DCBP
WBLK09119801	69	117
BS	69	106
BSD	75	113
3304-0046	42 *	54 *

	ADVISORY
	QC
	Limits
Tetrachloro-m-xylene (TCMX)	60-150
Decachlorobiphenyl (DCBP)	60-150

**Table 2.9 Results of the BS/BSD Analysis for Pesticide/PCB in Water
WA# 3-304 Waste Disposal, Inc.**

Sample ID: WBLK

Compound	Sample	BS			BSD			RPD	Advisory QC Limits	
		Conc ($\mu\text{g/L}$)	Spike Added ($\mu\text{g/L}$)	BS Conc ($\mu\text{g/L}$)	BS % Rec	Spike Added ($\mu\text{g/L}$)	BSD Conc ($\mu\text{g/L}$)		% Rec	RPD
g-BHC	U	0.125	0.037	30	*	0.125	0.040	32	*	6
Heptachlor	U	0.125	0.081	65		0.125	0.086	69		6
Aldrin	U	0.125	0.086	69		0.125	0.091	73		6
Dieldrin	U	0.250	0.192	77		0.250	0.211	84		9
Endrin	U	0.250	0.227	91		0.250	0.255	102		11
p,p'-DDT	U	0.250	0.122	49		0.250	0.144	58		17

CHAIN OF CUSTODY RECORD

COC # 3304-210898-0009

REAC, Edison, NJ
 Contact: Gary Newhart
 (732) 321-4214
 WO#: 03347-143-001-3304-01
 EPA Contract 08-C4-0022

Project Name: WDI Site
 Location: Santa Fe Springs Ca
 Site Phone: (562) 941-4616

Page No.: 01 of 01
 Cooler #: N/A
 Lab: REAC
 Contact: Vinod Kansel
 (732) 321-4200

082498 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
573	C	3304-0048	B6	Ground Water	8/20/1998	32 oz Amber/4 C	Base neutral/acid extractables		
574	C	3304-0049	B7	Ground Water	8/20/1998	32 oz Amber/4 C	Base neutral/acid extractables		
575	C	3304-0050	B6	Ground Water	8/20/1998	32 oz Amber/4 C	Base neutral/acid extractables		
576	C	3304-0051	VW-55	Ground Water	8/20/1998	32 oz Amber/4 C	Base neutral/acid extractables		
577	C	3304-0052	H8	Ground Water	8/21/1998	32 oz Amber/4 C	Base neutral/acid extractables		
578	C	3304-0053	H7	Ground Water	8/21/1998	32 oz Amber/4 C	Base neutral/acid extractables		
579	C	3304-0054	I7	Ground Water	8/21/1998	32 oz Amber/4 C	Base neutral/acid extractables		
580	C	3304-0055	C8	Ground Water	8/21/1998	32 oz Amber/4 C	Base neutral/acid extractables		
581	C	3304-0056	C5	Ground Water	8/21/1998	32 oz Amber/4 C	Base neutral/acid extractables		
582	C	3304-0057	E3	Ground Water	8/21/1998	32 oz Amber/4 C	Base neutral/acid extractables		
583	C	3304-0058	C4	Ground Water	8/21/1998	32 oz Amber/4 C	Base neutral/acid extractables		

Special Instructions:

QA Vans

PLEASE REPORT SAMPLE #'S AS 0048, 0049 etc

REFERENCE COC:

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
all samples collected 8/24/98 C Masser	C Masser	8/24/98	W 45	8/24/98	11:11am	All analysis	C Masser	8/24/98	H K Ha	8/24/98	11:35 am

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-170898-0003

REAC, Edison, NJ
 Contact: Gary Newhart
 (732) 321-4214
 WO#: 03347-143-001-3304-01
 EPA Contract 88-C4-0022

Project Name: WDI Site
 Location: Santa Fe Springs Ca
 Site Phone: (562) 941-4616

Page No.: 1 of 1
 Cooler #: N/A
 Lab: REAC
 Contact: Vinod Kansal
 (732)321-4200

09/11/98

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
835	B	3304-0046	TRC's Large Baker Tank	Ground Water	8/19/98	32 oz Amber/4 C	Pesticides/PCB		
835	C	3304-0046	TRC's Large Baker Tank	Ground Water	8/19/98	32 oz Amber/4 C	Base neutral/acid extractables		
836	A	3304-0047	600 gal Baker Tank	Ground Water Oil	8/19/98	40 ml VOA/4 C	Pest/PCB & BNA		

Special Instructions:

QA/QC by: *EPM/EDN* 8/14/98

REFERENCE COC:

Item/Reason	Relinquished By	Date	Received By	Date	Time	Item/Reason	Relinquished By	Date	Received By	Date	Time
<i>Analyst</i>	3/Analysis, 12/13/98			11/14/98	1:30	ANALYST/PLANT			<i>M. Flippin</i>	9/14/98	10:30 AM

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-130898-0001-A

REAC, Edison, NJ
 Contact: Gary Newhart
 (908) 321-4200
 WOH: 03347-143-001-3304-01
 EPA Contract 68-C4-0022

Project Name: WDI Site
 Location: Santa Fe Springs Ca
 Site Phone: (362) 941-4816

Page No.: 2 of 2
 Cooler #: N/A
 Lab: REAC
 Contact: Vinod Kansal
 (732)321-4200

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analytes Requested	MS MSD	Comments
410	A	3304-0026	15	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		
411	A	3304-0027	14	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		
412	A	3304-0028	H4	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		
413	A	3304-0037	G3	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		
414	A	3304-0039	H2	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		
415	A	3304-0040	G2	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		
416	A	3304-0044	F1	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		
417	A	3304-0045	G1	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	PCB/BNA		

Special Instructions:

QA/QC b, 1M

REFERENCE COC:

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
16 samples/analysis	<u>Gary P. Newhart</u>	8/14/98	C. H. Gossen	8/17/98	8:20	All/Fluxibility	<u>C. H. Gossen</u>	8/17/98	<u>K. Ferguson</u>	8/17/98	9:30 AM

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-130898-0001

REAC, Edison, NJ
 Contact: Gary Newhart
 (908) 321-4200
 WOH: 03347-143-001-3304-01
 EPA Contract 68-C4-0022

Project Name: WDI Site
 Location: Santa Fe Springs Ca
 Site Phone: (562) 941-4616

Page No.: 1 of 3
 Cooler #: N/A
 Lab: REAC
 Contact: Vinod Kanesh
 (732)321-4200

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
402	A	3304-0001	C9	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		
403	A	3304-0002	D9	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		
404	A	3304-0003	E9	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		
405	A	3304-0004	F9	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		
406	A	3304-0009	E8	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		
407	A	3304-0013	E7	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		
408	A	3304-0014	F7	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		
409	A	3304-0015	G7	LIQUID ORGANIC WASTE	8/13/98	40 ml VOA/4 C	Post/PCB & BNA		

Special Instructions:

QHQC b, M

REFERENCE COC:

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
Initials No sample taken	Sgt P Newhart	8/14/98	C. Gersten	8/17/98	9:20	HII/Analysis	C. Gersten	8/17/98	H. Kogen	8/18/98	9:30 AM

Appendix D

APPENDIX D
FINAL ANALYTICAL REPORT
PIEZOMETERS AND BAKER TANKS - WATER SAMPLES
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CALIFORNIA
MAY 1999

LM\FR\00085



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-484-4021

DATE: 28 October 1998
TO: R. Singhvi EPA/ERTC
FROM: V. Kansal Analytical Section Leader *V. not Kansal*
SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 3-304

Attached please find the following document prepared under this work assignment:

Waste Disposal, Inc. - Analytical Report

Central File WA # 3-304	(w/attachment)
B. Coakley	Work Assignment Manager (w/attachment)
G. Newhart	Task Leader (w/attachment)
M. Barkley	Data Validation and Report Writing
	Group Leader (w/o attachment)

J304\DELVAR\9810WASTEDAR



ANALYTICAL REPORT

Prepared by
Roy F. Weston, Inc.

Waste Disposal, Inc.
Santa Fe Springs, California

October, 1998

EPA Work Assignment No. 3-304
WESTON Work Order No. 03347-143-001-3304-01
EPA Contract No. 68-C4-0022

Submitted to
B. Coakley
EPA-ERTC

G. Newhart
Task Leader

Date

V. Kansal
Analytical Section Leader

10/28/98

Date

E. Gilardi
Program Manager

10/29/98

Date

Analysis by:
QST Environmental, Inc.,
REAC

Prepared by:
D. Laviska

Reviewed by:
M. Barkley

Table of Contents

<u>Topic</u>	<u>Page Number</u>
Introduction	Page 1
Case Narrative	Page 2
Summary of Abbreviations	Page 5

Section I

Analytical Procedure for VOC in Water	Page 6	
Analytical Procedure for VOC in Liquid Organic Waste	Page 6	
Analytical Procedure for Pesticides/PCB in Water	Page 7	
Analytical Procedure for TAL Metals in Water	Page 9	
Analytical Procedure for TAL Metals in Liquid Organic Waste	Page 9	
Results of the Analysis for VOC in Water and Liquid Organic Waste	Table 1.1	Page 10
Results of the Analysis for Pesticides/PCB in Water	Table 1.2	Page 18
Results of the Analysis for TAL Metals in Water and Liquid Organic Waste	Table 1.3	Page 21

Section II

QA/QC for VOC in Water and Liquid Organic Waste	Page 28	
Results of the Surrogate Recoveries for VOC in Water and Liquid Organic Waste	Table 2.1	Page 29
Results of the MS/MSD Analysis for VOC in Water and Liquid Organic Waste	Table 2.2	Page 31
QA/QC for Pesticides/PCB in Water	Page 33	
Results of the Surrogate Recoveries for Pesticides/PCB in Water	Table 2.3	Page 34
Results of the BS/BSD Analysis for Pesticides/PCB in Water	Table 2.4	Page 35
QA/QC for TAL Metals in Water and Liquid Organic Waste	Page 36	
Results of the Matrix Spike Analysis for TAL Metals in Water and Liquid Organic Waste	Table 2.5	Page 37
Results of the Duplicate Analysis for TAL Metals in Water and Liquid Organic Waste	Table 2.6	Page 39
Results of the LCS Analysis for TAL Metals in Water and Liquid Organic Waste	Table 2.7	Page 41

Table of Contents (cont.)

<u>Topic</u>	<u>Page Number</u>
Section III	
Chains of Custody	Page 43
Communications	Page 49
Appendix A Data for VOC (QST Environmental, Inc.)	Page H410001
Appendix B Data for Pesticides/PCB (REAC)	Page H430001
Appendix C Data for TAL Metals (QST Environmental, Inc.)	Page H408001

Appendices will be furnished on request.

Introduction

REAC, in response to WA #3-304, provided analytical support for environmental samples collected from the Waste Disposal, Inc. site located in Santa Fe Springs, California as described in the following table. The support also included QA/QC, data review, and preparation of an analytical report containing a summary of the analytical methods, the results, and the QA/QC results.

The samples were treated with procedures consistent with those described in SOP #1008.

Chain of Custody	Number of Samples Analyzed	Sampling Date	Date Received	Matrix	Analysis	Laboratory
3304-130898-0002	8	08/13/98	08/15/98	Liquid Organic Waste	VOA, TAL Metals	QST Environmental Inc.
3304-130898-0002-A	8					
3304-170898-0004	2	08/19/98	08/20/98	Water	VOA, TAL Metals	
3304-210898-0010	4	08/20/98	08/24/98	Water	TAL Metals	REAC
	8	08/21/98				
3304-210898-0011	4	08/20/98	08/24/98	Water	Pesticides/PCB	
	8	08/21/98				
3304-210898-0012	4	08/20/98	08/24/98	Water	VOA	QST Environmental Inc.
	8	08/21/98				
	1	08/22/98				

CASE NARRATIVE

The container(s) for the sample 3304-0005 on the chain of custody #3304-130898-0002 were mis-labeled as 3304-0009. Although the supporting documentation for this report consistently refers to the sample as 3304-0009, at the request of the task leader, we have presented the data with the label 3304-0005 to be consistent with the chain of custody.

Some of the liquid organic waste samples were biphasic. In these cases, only the organic phase was used for the VOC and metals analyses.

Data Package H410 - VOC Analysis

Due to the insolubility of the liquid waste (oil) samples and methanol (the extraction solvent), the results for all liquid waste samples should be considered estimated.

On the instrument "VOA6", acetone (2.7 µg/L) and 2-butanone (1.4 µg/L) were detected in the method blank of 08/21/98. The results for these compounds in the associated samples are either non-detected or greater than ten times the concentrations found in the blank; the data are not affected.

On the instrument "VOA6", acetone (12 µg/L) and 2-butanone (3.1 µg/L) were detected in the method blank of 08/24/98. The results for these compounds in the associated samples are either non-detected or greater than ten times the concentrations found in the blank; the data are not affected.

On the instrument "VOA6", acetone (8.2 µg/L), dichloromethane (3.7 µg/L), and 2-butanone (2.0 µg/L) were detected in the method blank of 08/25/98. The results for these compounds in the associated samples are either non-detected or greater than ten times the concentrations found in the blank; the data are not affected.

On the instrument "VOA6", acetone (8.2 µg/L) and 2-butanone (2.1 µg/L) were detected in the method blank of 08/26/98. The results for these compounds in the associated samples are either non-detected or greater than ten times the concentrations found in the blank; the data are not affected.

On the instrument "VOA8", acetone (3.0 µg/L) and 4-methyl-2-pentanone (1.0 µg/L) were detected in the method blank of 08/26/98. The result for acetone in the sample 3304-0060 (5.7 µg/L) should be considered non-detected. The remaining results for these compounds in the associated samples are either non-detected or greater than ten times the concentrations found in the blank; the data are not affected.

In the initial calibration of 08/25/98 on instrument "VOA8", the percent relative standard deviation for acetone (40%) was outside the acceptable QC limits. The results for acetone in the method blank of 08/26/98 and the samples 3304-0050, 3304-0060, 3304-0048, 3304-0049, 3304-0052, 3304-0053, 3304-0054, 3304-0055, 3304-0056, 3304-0057, 3304-0058, and 3304-0059 should be considered estimated.

In the continuing calibration of 08/27/98 on instrument "VOA8", the percent difference for carbon disulfide (32%) was outside the acceptable QC limits. This compound was not detected in the associated samples; the data are not affected.

In the continuing calibration of 08/24/98 on instrument "VOA6", the percent difference for acetone (31%) was outside the acceptable QC limits. The results for acetone in the method blank of 08/24/98 and the samples 3304-0003, 3304-0004, 3304-0005, 3304-0013, and 3304-0014 should be considered estimated.

In the continuing calibration of 08/25/98 on instrument "VOA6", the percent difference for acetone (28%) was outside the acceptable QC limits. The results for acetone in the method blank of 08/25/98 and the samples 3304-0047 and 3304-0015 should be considered estimated.

In the continuing calibration of 08/26/98 on instrument "VOA6", the percent difference for acetone (40%) was outside the acceptable QC limits. The results for acetone in the method blank of 08/26/98 and the sample 3304-0046 should be considered estimated.

Data Package H430 - Pesticides/PCB Analysis

The resolution check mixture did not contain endrin ketone.

There were no analyses of the resolution check mixture, the PEM, and the 100 ppb pesticide standard before the instrument "J" was calibrated for the aroclors 1248 and 1260.

Surrogates were not included in the aroclor 1248 and 1260 initial calibration summaries.

Fingerprints were not run on instrument "J" to screen samples after the acid clean-up procedure.

Sulfur and florisil clean-up procedures were not utilized to improve the chromatograms of the heavily contaminated samples.

In the initial calibration of 09/16/98 for aroclor 1248, the average percent relative standard deviation for the five peaks (23%) exceeded the acceptable QC criteria. The result for aroclor 1248 in the sample 3304-0052, 3304-0053, and 3304-0057 should be considered estimated.

In the end-of-sequence continuing calibration of 09/09/98 for pesticides, the percent difference for endrin (26%), DDT (37%), and endrin aldehyde (38%) exceeded the acceptable QC criteria. No samples were quantitated using this calibration; the data are not affected.

In the continuing calibration of 09/10/98 for pesticides, the percent difference for endrin (29%) and methoxychlor (36%) exceeded the acceptable QC criteria. Neither of these compounds was detected in the associated samples; the data are not affected.

In the end-of-sequence continuing calibration of 09/10/98 for pesticides, the percent difference for heptachlor (35%), DDD (45%), DDT (94%), endrin aldehyde (37%), methoxychlor (not found), endrin ketone (43%), and DCBP (40%) exceeded the acceptable QC criteria. No samples were quantitated using this calibration; the data are not affected.

In the end-of-sequence continuing calibration of 09/21/98 for aroclor 1260, the average percent difference for the five peaks (49%) exceeded the acceptable QC criteria. No samples were quantitated using this calibration; the data are not affected.

In the end-of-sequence continuing calibration of 09/22/98 for pesticides, the percent difference for heptachlor (26%) and endrin aldehyde (34%) exceeded the acceptable QC criteria. No samples were quantitated using this calibration; the data are not affected.

One surrogate recovery exceeded the acceptable QC limits for the samples 3304-0054 and 3304-0056; the data are not affected.

Two surrogate recoveries exceeded the acceptable QC limits for the samples 3304-0048, 3304-0049, 3304-0050, 3304-0051

3304-0052, 3304-0053, 3304-0055, 3304-0057, 3304-0058, and 3304-0059. All data for these samples should be considered estimated.

The peak for DDE was outside the retention time window on the secondary column for the sample 3304-0055. Professional judgement was used in the identification of this compound.

Data Package H408 - TAL Metals Analysis

The samples listed on the chain of custody #3304-210898-0010 were received by the subcontracted laboratory at a temperature of 23 °C, which exceeded the acceptable limits (2 - 6 °C).

Antimony (4.9 µg/L) was detected in Method Blank 2. The concentrations in the associated samples where antimony was detected were greater than five times the concentration found in the method blank; the data are not affected.

The MS for the sample 3304-0026 exceeded the acceptable QC limit for antimony (71%), mercury (74%), and thallium (64%). Also, the MS for the sample 3304-0051 exceeded the acceptable QC limit for antimony (67%). The antimony, mercury, and thallium results for the samples 3304-0026, 3304-0027, 3304-0028, 3304-0037, 3304-0039, 3304-0040, 3304-0044, 3304-0045, 3304-0001, 3304-0002, 3304-0003, 3304-0004, 3304-0009, 3304-0013, 3304-0014, 3304-0015, 3304-0046, 3304-0047, 3304-0048, 3304-0049, 3304-0050, 3304-0051, 3304-0052, 3304-0053, 3304-0054, 3304-0055, 3304-0056, 3304-0057, 3304-0058, and 3304-0059 should be considered estimated.

The MS for the sample 3304-0026 exceeded the acceptable QC limit for lead (324%). The lead results for the samples 3304-0026, 3304-0027, 3304-0028, 3304-0037, 3304-0039, 3304-0040, 3304-0044, 3304-0045, 3304-0001, 3304-0002, 3304-0003, 3304-0004, 3304-0009, 3304-0013, 3304-0014, 3304-0015, 3304-0047, 3304-0048, 3304-0049, 3304-0050, 3304-0052, 3304-0053, 3304-0055, 3304-0056, 3304-0057, and 3304-0059 should be considered estimated.

Summary of Abbreviations

AA	Atomic Absorption			
B	The analyte was found in the blank			
BFB	Bromofluorobenzene			
C	Centigrade			
D	(Surrogate Table) this value is from a diluted sample and was not calculated (Result Table) this result was obtained from a diluted sample			
Dioxin	denotes Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans and/or PCDD and PCDF			
CLP	Contract Laboratory Protocol			
COC	Chain of Custody			
CONC	Concentration			
CRDL	Contract Required Detection Limit			
CRQL	Contract Required Quantitation Limit			
DFTPP	Decafluorotriphenylphosphine			
DL	Detection Limit			
E	The value is greater than the highest linear standard and is estimated			
EMPC	Estimated maximum possible concentration			
ICAP	Inductively Coupled Argon Plasma			
ISTD	Internal Standard			
J	The value is below the method detection limit and is estimated			
LCS	Laboratory Control Sample			
LCSD	Laboratory Control Sample Duplicate			
MDL	Method Detection Limit			
MI	Matrix Interference			
MS	Matrix Spike			
MSD	Matrix Spike Duplicate			
MW	Molecular Weight			
NA	either Not Applicable or Not Available			
NC	Not Calculated			
NR	Not Requested			
NS	Not Spiked			
% D	Percent Difference			
% REC	Percent Recovery			
PQL	Practical Quantitation Limit			
PPBV	Parts per billion by volume			
PPBA	Parts per billion in Air			
QL	Quantitation Limit			
RPD	Relative Percent Difference			
RSD	Relative Standard Deviation			
SIM	Selected Ion Mode			
TCLP	Toxic Characteristics Leaching Procedure			
U	Denotes not detected			
W	Weathered sample; the results should be regarded as estimated			
m³	cubic meter	kg	kilogram	µg
L	liter	g	gram	pg
mL	milliliter	mg	milligram	
µL	microliter			
*	denotes a value that exceeds the acceptable QC limit			
	Abbreviations that are specific to a particular table are explained in footnotes on that table			
	Revision 10/16/97			

Analytical Procedure for VOC in Water

The subcontracted laboratory determined the concentrations of VOC in water samples using the CLP method 624. The results of the analysis are listed in Table 1.1.

Analytical Procedure for VOC in Liquid Organic Waste

The subcontracted laboratory determined the concentrations of VOC in liquid organic waste samples using a modified CLP method 624. The results of the analysis are listed in Table 1.1.

Analytical Procedure for Pesticides/PCB in Water

Extraction Procedure

One liter of sample was spiked with a surrogate solution consisting of tetrachloro-m-xylene and decachlorobiphenyl, and was extracted three times with 60 mL portions of methylene chloride. The combined extracts were filtered, concentrated to 10 mL, solvent exchanged with 60 mL hexane, and the hexane concentrated to 1.0 mL or 5.0 mL.

Gas Chromatographic Analysis

The extract was analyzed for pesticides and PCBs using simultaneous dual column injections. The analysis was done on an HP 5890 GC/ECD system, equipped with an HP 7673A automatic sampler, and controlled with an HP-ChemStation. The following conditions were employed:

First Column	DB-608, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200 °C
Detector Temperature	325 °C
Temperature Program	70 °C for 1 minute 30 °C/min to 150 °C, 0.5 min at 150 °C 8 °C/min to 275 °C, 10 min at 275 °C
Second Column	Rtx-CLPesticides, 30 meter, 0.32mm fused silica capillary, 0.50 µm film thickness
Injector Temperature	200 °C
Detector Temperature	325 °C
Temperature Program	70 °C for 1 minute 30 °C/min to 150 °C, 0.5 min at 150 °C 8 °C/min to 275 °C, 10 min at 275 °C

The gas chromatographs were calibrated using 5 pesticide standards at 20, 50, 100, 200, and 500 µg/L. The results from each mixture were used to calculate the response factor (RF) of each analyte and the average Response Factor was used to calculate the concentration of pesticide in the sample. Quantification was based on the DB-608 column (signal 1) and the identity of the analyte was confirmed using the Rtx-CLPesticides column (signal 2). A fingerprint chromatogram was run using each of the seven Aroclor mixtures and toxaphene; calibration curves were run only if a particular Aroclor or toxaphene was found in the sample.

The pesticides/PCB results for water, listed in Table 1.2, are calculated by using the following formula:

$$C_u = \frac{DF \times A_u \times V_i}{RF_{ave} \times V_i \times V_s}$$

where

C_u	= Concentration of analyte ($\mu\text{g/L}$)
DF	= Dilution Factor
A_u	= Area or peak height
V_i	= Volume of sample (mL)
RF_{ave}	= Average response factor
V_i	= Volume of extract injected (μL)
V_s	= Sample volume (mL)

Response Factor calculation:

The RF for each specific analyte is quantitated based on the area response from the continuing calibration check as follows:

$$RF = \frac{A_u}{\text{total pg injected}}$$

where

A_u = Area or peak height

and

$$RF_{ave} = \frac{RF_1 + \dots + RF_n}{n}$$

where

n = number of samples

Revision 7/22/97

Analytical Procedure for TAL Metals in Water

The subcontracted laboratory determined the concentrations of TAL metals in water samples using the CLP method. The results of the analysis are listed in Table 1.3.

Analytical Procedure for TAL Metals in Liquid Organic Waste

The subcontracted laboratory determined the concentrations of TAL metals in water samples using the CLP method. The results of the analysis are listed in Table 1.3.

Table 1.1 Results of the Analysis for VOC in Water and Liquid Organic Waste
VIA # 3-304 Waste Disposal, Inc.

Sample ID Location Date Sampled Date Analyzed	Method Blank 1		3304-0026		3304-0027		3304-0028		3304-0037	
	—		I5 (8/13/96) (8/21/96)		I4 (8/13/96) (8/21/96)		H4 (8/13/96) (8/21/96)		G3 (8/13/96) (8/21/96)	
	Analyte	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)						
Chloromethane	U	10	U	250000	U	250000	U	250000	U	250000
Vinyl Chloride	U	10	U	250000	8600 J	250000	U	250000	U	250000
Bromomethane	U	10	24000 J	250000	26000 J	250000	18000 J	250000	U	250000
Chloroethane	U	10	U	250000	U	250000	U	250000	U	250000
1,1-Dichloroethylene	U	10	U	250000	U	250000	U	250000	U	250000
Acetone	2.7 J	10	87000 J	250000	52000 J	250000	84000 J	250000	84000 J	250000
Carbon Disulfide	U	10	U	250000	U	250000	U	250000	U	250000
Methylene Chloride	U	10	18000 J	250000	25000 J	250000	U	250000	51000 J	250000
trans-1,2-Dichloroethene	U	10	U	250000	U	250000	U	250000	U	250000
1,1-Dichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
2-Butanone	1.4 J	10	63000 J	250000	37000 J	250000	74000 J	250000	U	250000
cis-1,2-Dichloroethene	U	10	12000 J	250000	12000 J	250000	U	250000	U	250000
Chloroform	U	10	U	250000	U	250000	U	250000	U	250000
1,2-Dichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
1,1,1-Trichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
Carbon Tetrachloride	U	10	U	250000	U	250000	U	250000	U	250000
Benzene	U	10	80000 J	250000	34000 J	250000	170000 J	250000	140000 J	250000
Trichloroethene	U	10	14000 J	250000	U	250000	U	250000	U	250000
1,2-Dichloropropane	U	10	U	250000	U	250000	U	250000	U	250000
Bromodichloromethane	U	10	U	250000	U	250000	U	250000	U	250000
cis-1,3-Dichloropropene	U	10	U	250000	U	250000	U	250000	U	250000
trans-1,3-Dichloropropene	U	10	U	250000	U	250000	U	250000	U	250000
1,1,2-Trichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
Dibromochloromethane	U	10	U	250000	U	250000	U	250000	U	250000
Bromoform	U	10	U	250000	U	250000	U	250000	U	250000
4-Methyl-2-pentanone	U	10	U	250000	U	250000	U	250000	U	250000
Toluene	U	10	630000	250000	260000	250000	930000	250000	480000	250000
Tetrachloroethene	U	10	11000 J	250000	U	250000	U	250000	U	250000
2-Hexanone	U	10	U	250000	U	250000	U	250000	U	250000
Chlorobenzene	U	10	U	250000	U	250000	U	250000	U	250000
Ethylbenzene	U	10	330000	250000	130000 J	250000	480000	250000	390000	250000
Xylenes, Total	U	10	2400000	250000	860000	250000	3200000	250000	1700000	250000
Styrene	U	10	U	250000	U	250000	U	250000	U	250000
1,1,2,2-Tetrachloroethane	U	10	U	250000	U	250000	U	250000	U	250000

Table 1.1 (cont.) Results of the Analysis for VOC In Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample ID	3304-0039		3304-0040		3304-0044		3304-0045		3304-0001			
Location	H2		G2		F1		G1		C9			
Date Sampled	(8/13/98)		(8/13/98)		(8/13/98)		(8/13/98)		(8/13/98)			
Date Analyzed	(8/21/98)		(8/21/98)		(8/21/98)		(8/21/98)		(8/21/98)			
Analyte	Result	MDL										
	(µg/L)	(µg/L)										
Chloromethane	4900	J	250000		U	250000	5300	J	250000	U	250000	
Vinyl Chloride	U	250000	U	250000	U	250000	31000	J	250000	U	250000	
Bromomethane	12000	J	250000	U	250000	69000	J	250000	27000	J	250000	
Chloroethane	U	250000										
1,1-Dichloroethylene	U	250000										
Acetone	83000	J	250000	67000	J	250000	63000	J	250000	90000	J	250000
Carbon Disulfide	U	250000										
Methylene Chloride	U	250000	47000	J	250000	U	250000	U	250000	U	250000	
trans-1,2-Dichloroethene	U	250000	U	250000	U	250000	U	250000	23000	J	250000	
1,1-Dichloroethane	U	250000										
2-Butanone	U	250000	60000	J	250000	65000	J	250000	93000	J	250000	
cis-1,2-Dichloroethene	U	250000	3900	J	250000	23000	J	250000	250000	250000		
Chloroform	U	250000										
1,2-Dichloroethane	U	250000										
1,1,1-Trichloroethane	U	250000										
Carbon Tetrachloride	U	250000										
Benzene	260000	250000	110000	J	250000	110000	J	250000	U	250000		
Trichloroethene	U	250000	170000	J	250000	18000	J	250000	660000	250000		
1,2-Dichloropropene	U	250000										
Bromodichloromethane	U	250000	33000	J	250000	U	250000	77000	J	250000		
cis-1,3-Dichloropropene	U	250000										
trans-1,3-Dichloropropene	U	250000										
1,1,2-Trichloroethane	U	250000										
Dibromochloromethane	U	250000										
Bromoform	U	250000										
4-Methyl-2-pentanone	U	250000										
Toluene	940000	250000	680000	250000	440000	250000	1100000	250000	13000	J	250000	
Tetrachloroethene	4500	J	250000	780000	250000	32000	J	250000	4000000	250000		
2-Hexanone	U	250000										
Chlorobenzene	U	250000	U	250000	5300	J	250000	7500	J	250000		
Ethylbenzene	440000	250000	260000	250000	250000	250000	520000	250000	180000	J	250000	
Xylenes, Total	2600000	250000	2100000	250000	1600000	250000	3800000	250000	230000	J	250000	
Styrene	U	250000										
1,1,2-Tetrachloroethane	U	250000										

Table 1.1 (cont.) Results of the Analysis for VOC in Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample ID Location Date Sampled Date Analyzed	Method Blank 3		3304-0003		3304-0004		3304-0005		3304-0013	
	—		E9 (8/13/98)		F9 (8/13/98)		G9 (8/13/98)		E7 (8/13/98)	
	(8/24/98)		(8/24/98)		(8/24/98)		(8/24/98)		(8/24/98)	
Analyte	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)								
Chloromethane	U	10	5100 J	250000	5000 J	250000	U	250000	U	250000
Vinyl Chloride	U	10	U	250000	U	250000	12000 J	250000	U	250000
Bromomethane	1.7 J	10	25000 J	250000	20000 J	250000	18000 J	250000	U	250000
Chloroethane	U	10	U	250000	U	250000	U	250000	U	250000
1,1-Dichloroethylene	U	10	U	250000	U	250000	U	250000	U	250000
Acetone	12	10	120000 J	250000	120000 J	250000	53000 J	250000	82000 J	250000
Carbon Disulfide	U	10	U	250000	U	250000	U	250000	U	250000
Methylene Chloride	U	10	U	250000	U	250000	U	250000	U	250000
trans-1,2-Dichloroethene	U	10	U	250000	U	250000	U	250000	U	250000
1,1-Dichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
2-Butanone	3.1 J	10	U	250000	85000 J	250000	91000 J	250000	82000 J	250000
cis-1,2-Dichloroethene	U	10	U	250000	U	250000	85000 J	250000	U	250000
Chloroform	U	10	U	250000	U	250000	U	250000	U	250000
1,2-Dichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
1,1,1-Trichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
Carbon Tetrachloride	U	10	U	250000	U	250000	U	250000	U	250000
Benzene	U	10	43000 J	250000	310000	250000	63000 J	250000	58000 J	250000
Trichloroethene	U	10	U	250000	U	250000	500000	250000	U	250000
1,2-Dichloropropene	U	10	U	250000	U	250000	U	250000	U	250000
Bromodichloromethane	U	10	21000 J	250000	110000 J	250000	38000 J	250000	32000 J	250000
cis-1,3-Dichloropropene	U	10	U	250000	U	250000	U	250000	U	250000
trans-1,3-Dichloropropene	U	10	U	250000	U	250000	U	250000	U	250000
1,1,2-Trichloroethane	U	10	U	250000	U	250000	U	250000	U	250000
Dibromochloromethane	U	10	U	250000	U	250000	U	250000	U	250000
Bromoform	U	10	U	250000	U	250000	U	250000	U	250000
4-Methyl-2-pentanone	U	10	U	250000	U	250000	U	250000	U	250000
Toluene	U	10	160000 J	250000	2700000	250000	420000	250000	290000	250000
Tetrachloroethene	U	10	U	250000	U	250000	72000 J	250000	U	250000
2-Hexanone	U	10	U	250000	U	250000	U	250000	U	250000
Chlorobenzene	U	10	U	250000	U	250000	6600 J	250000	11000 J	250000
Ethylbenzene	U	10	160000 J	250000	1000000	250000	230000 J	250000	370000	250000
Xylenes, Total	U	10	780000	250000	8400000	250000	1300000	250000	1800000	250000
Styrene	U	10	U	250000	U	250000	U	250000	U	250000
1,1,2,2-Tetrachloroethane	U	10	U	250000	U	250000	U	250000	U	250000

**Table 1.1 (cont.) Results of the Analysis for VOC in Water and Liquid Organic Waste
WA #3-304, Waste Disposal, Inc.**

Sample ID	3304-0014		Method Blank 6		3304-0002		3304-0047		3304-0015				
Location	F7		—		D8		600 Gal Baker Tank		G7				
Date Sampled	(8/13/98)		—		(8/13/98)		(8/13/98)		(8/13/98)				
Date Analyzed	(8/24/98)		(8/25/98)		(8/25/98)		(8/25/98)		(8/25/98)				
Analyte	Result	MDL	Result	MDL	Result	MDL	Result	MDL	Result	MDL			
	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)			
Chloromethane	U	250000	U	10	U	100000	U	50000	U	250000			
Vinyl Chloride	5100	J	250000	U	10	U	100000	U	50000	U	250000		
Bromomethane	U	250000	U	10	U	100000	U	50000	U	250000			
Chloroethane	U	250000	U	10	U	100000	U	50000	U	250000			
1,1-Dichloroethylene	U	250000	U	10	U	100000	U	50000	U	250000			
Acetone	92000	J	250000	8.2 J	10	U	100000	22000	J	50000	81000 J	250000	
Carbon Disulfide	U	250000	U	10	U	100000	U	50000	U	250000			
Methylene Chloride	U	250000	3.7 J	10	31000	J	100000	7900	J	50000	44000 J	250000	
trans-1,2-Dichloroethene	U	250000	U	10	U	100000	U	50000	U	250000			
1,1-Dichloroethane	U	250000	U	10	U	100000	U	50000	U	250000			
2-Butanone	75000	J	250000	2.0 J	10	27000	J	100000	27000	J	50000	U	250000
cis-1,2-Dichloroethene	5100	J	250000	U	10	U	100000	5200	J	50000	13000 J	250000	
Chloroform	U	250000	U	10	U	100000	U	50000	U	250000			
1,2-Dichloroethane	U	250000	U	10	U	100000	U	50000	U	250000			
1,1,1-Trichloroethane	U	250000	U	10	U	100000	U	50000	U	250000			
Carbon Tetrachloride	U	250000	U	10	U	100000	U	50000	U	250000			
Benzene	60000	J	250000	U	10	19000	J	100000	5900	J	50000	43000 J	250000
Trichloroethene	U	250000	U	10	U	100000	11000	J	50000	21000 J	250000		
1,2-Dichloropropane	U	250000	U	10	U	100000	U	50000	U	250000			
Bromodichloromethane	21000	J	250000	U	10	U	100000	1700	J	50000	32000 J	250000	
cis-1,3-Dichloropropene	U	250000	U	10	U	100000	U	50000	U	250000			
trans-1,3-Dichloropropene	U	250000	U	10	U	100000	U	50000	U	250000			
1,1,2-Trichloroethane	U	250000	U	10	U	100000	U	50000	U	250000			
Dibromochloromethane	U	250000	U	10	U	100000	U	50000	U	250000			
Bromoform	U	250000	U	10	U	100000	U	50000	U	250000			
4-Methyl-2-pentanone	U	250000	U	10	U	100000	58000	50000	U	250000			
Toluene	140000	J	250000	U	10	1200	J	100000	40000	J	50000	280000	250000
Tetrachloroethene	U	250000	U	10	U	100000	7200	J	50000	24000 J	250000		
2-Hexanone	U	250000	U	10	U	100000	U	50000	U	250000			
Chlorobenzene	4800	J	250000	U	10	U	100000	U	50000	U	250000		
Ethylbenzene	230000	J	250000	U	10	69000	J	100000	21000	J	50000	220000	250000
Xylenes, Total	830000	250000	U	10	U	100000	150000	50000	1000000	250000			
Styrene	U	250000	U	10	U	100000	U	50000	U	250000			
1,1,2,2-Tetrachloroethane	U	250000	U	10	U	100000	U	50000	U	250000			

Table 1.1 (cont.) Results of the Analysis for VOC In Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample ID	Method Blank 6		3304-0046 TRC's Large Baker Tank (8/18/96) (8/26/96)	
Location	—			
Date Sampled	—			
Date Analyzed	(8/26/96)			
Analyte	Result	MDL	Result	MDL
	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Chloromethane	U	10	U	100
Vinyl Chloride	U	10	16 J	100
Bromomethane	U	10	U	100
Chloroethane	U	10	U	100
1,1-Dichloroethylene	U	10	U	100
Acetone	8.2 J	10	11000	100
Carbon Disulfide	U	10	5.1 J	100
Methylene Chloride	U	10	11 J	100
trans-1,2-Dichloroethene	U	10	3.3 J	100
1,1-Dichloroethane	U	10	U	100
2-Butanone	2.1 J	10	29000	100
cis-1,2-Dichloroethene	U	10	120	100
Chloroform	U	10	U	100
1,2-Dichloroethane	U	10	U	100
1,1,1-Trichloroethane	U	10	U	100
Carbon Tetrachloride	U	10	U	100
Benzene	U	10	55 J	100
Trichloroethene	U	10	40 J	100
1,2-Dichloropropane	U	10	U	100
Bromodichloromethane	U	10	U	100
cis-1,3-Dichloropropene	U	10	U	100
trans-1,3-Dichloropropene	U	10	U	100
1,1,2-Trichloroethane	U	10	U	100
Dibromochloromethane	U	10	U	100
Bromoform	U	10	U	100
4-Methyl-2-pentanone	U	10	28000	100
Toluene	U	10	110	100
Tetrachloroethene	U	10	4.2 J	100
2-Hexanone	U	10	60 J	100
Chlorobenzene	U	10	U	100
Ethylbenzene	U	10	13 J	100
Xylenes, Total	U	10	95 J	100
Styrene	U	10	U	100
1,1,2,2-Tetrachloroethane	U	10	U	100

Table 1.1 (cont.) Results of the Analysis for VOC in Water and Liquid Organic Waste

WA # 3-304 - Waste Disposal, Inc.

Sample ID	Method Blank 1	3304-0060	3304-0060	3304-0048	3304-0049
Location	—	B6 (8/20/98)	TB (8/22/98)	B8 (8/20/98)	B7 (8/20/98)
Date Sampled	—	(8/20/98)	(8/20/98)	(8/26/98)	(8/26/98)
Analyte	Result	MDL	Result	MDL	Result
	($\mu\text{g/L}$)				
Chloromethane	U	10	U	1000	10
Vinyl Chloride	U	10	7800	1000	110
Bromomethane	U	10	U	1000	50
Chloroethane	U	10	U	1000	50
1,1-Dichloroethylene	U	10	U	1000	50
Carbon Disulfide	U	10	U	1000	50
Acetone	U	10	U	1000	50
Methylene Chloride	U	10	U	1000	50
cis-1,2-Dichloroethene	U	10	U	1000	50
1,1-Dichloroethane	U	10	U	1000	50
Chloroform	U	10	U	1000	50
1,2-Dichloroethane	U	10	U	1000	50
2-Butanone	U	10	U	1000	50
1,1,1-Trichloroethane	U	10	U	1000	50
Carbon Tetrachloride	U	10	U	1000	50
Benzene	U	10	U	1000	50
Trichloroethene	U	10	U	1000	50
1,2-Dichloropropane	U	10	U	1000	50
Bromodichloromethane	U	10	U	1000	50
cis-1,3-Dichloropropene	U	10	U	1000	50
trans-1,3-Dichloropropene	U	10	U	1000	50
1,1,2-Trichloroethane	U	10	U	1000	50
Dibromochloromethane	U	10	U	1000	50
Bromoform	U	10	U	1000	50
4-Methyl-2-pentanone	U	10	U	1000	50
Toluene	U	10	U	1000	50
Tetrachloroethene	U	10	U	1000	50
2-Hexanone	U	10	U	1000	50
Chlorobenzene	U	10	U	1000	50
Ethylbenzene	U	10	U	1000	50
Xylenes - Total	U	10	U	1000	50
Styrene	U	10	U	1000	50
1,1,2,2-Tetrachloroethane	U	10	U	1000	50
trans-1,2-Dichloroethene	J	380	J	1000	50

Table 1.1 (cont.) Results of the Analysis for VOC in Water and Liquid Organic Wastes
WA # 3-304 - Waste Disposal, Inc.

Sample ID	3304-0051	3304-0052	3304-0053	3304-0054	3304-0055	
Location	H6	H7	I7	C8		
Date Sampled	(8/20/98)	(8/21/98)	(8/21/98)	(8/21/98)		
Date Analyzed	(8/26/98)	(8/26/98)	(8/26/98)	(8/26/98)		
Analyte	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)
Chloromethane	U	200	200	200	200	200
Vinyl Chloride	U	200	200	200	200	200
Bromomethane	U	200	200	200	200	200
Chloroethane	U	200	200	200	200	200
1,1-Dichloroethylene	U	200	200	200	200	200
Carbon Disulfide	U	200	200	200	200	200
Acetone	U	200	200	200	200	200
Methylene Chloride	U	200	200	200	200	200
cis-1,2-Dichloroethene	U	200	200	200	200	200
Chloroform	U	200	200	200	200	200
1,2-Dichloropropane	U	200	200	200	200	200
2-Butanone	U	200	200	200	200	200
1,1,1-Trichloroethane	U	200	200	200	200	200
Carbon Tetrachloride	U	200	200	200	200	200
Benzene	U	200	200	200	200	200
Trichloroethene	U	200	200	200	200	200
1,2-Dichloropropane	U	200	200	200	200	200
Bromodichloromethane	U	200	200	200	200	200
cis-1,3-Dichloropropene	U	200	200	200	200	200
1,1,2-Trichloroethane	U	200	200	200	200	200
Dibromochloromethane	U	200	200	200	200	200
Bromoform	U	200	200	200	200	200
4-Methyl-2-pentanone	U	200	200	200	200	200
Toluene	U	200	200	200	200	200
Tetrachloroethene	U	200	200	200	200	200
2-Hexanone	U	200	200	200	200	200
Chlorobenzene	U	200	200	200	200	200
Ethylbenzene	U	200	200	200	200	200
Xylenes, Total	25	J	37	J	70	J
Syrene	200	200	200	200	200	200
1,1,2,2-Tetrachloroethane	18	J	28	J	130	J
trans-1,2-Dichloroethene	200	200	200	200	200	200

Table 1.1 (cont.) Results of the Analysis for VOC in Water and Liquid Organic Waste
WA # 3304 Waste Disposal, Inc.

Analyte	Sample ID	3304-0086			3304-0087			Method Blank 2			3304-0088		
		C5 (8/21/98) (8/26/98)	C6 (8/21/98) (8/26/98)	—	E3 (8/21/98) (8/26/98)	—	(8/27/98)	—	(8/21/98) (8/27/98)	—	C4 (8/21/98) (8/27/98)	D6 (8/21/98) (8/27/98)	—
Location	Date Sampled	Result	MDL	($\mu\text{g/L}$)	Result	MDL	($\mu\text{g/L}$)	Result	MDL	($\mu\text{g/L}$)	Result	MDL	($\mu\text{g/L}$)
Date Analyzed													
Chloromethane		U	500	U	150	J	200	10	10	200	200	200	200
Vinyl Chloride		1200	500	U	U	200	10	10	200	200	200	200	200
Bromomethane		U	500	500	200	10	10	200	200	200	200	200	200
Chloroethane		U	500	500	200	10	10	200	200	200	200	200	200
1,1-Dichloroethylene		U	500	500	200	10	10	200	200	200	200	200	200
Carbon Disulfide		U	500	1600	200	10	10	200	200	200	200	200	200
Acetone		490	J	500	U	200	10	10	200	200	200	200	200
Methylene Chloride		U	500	63	J	200	10	10	200	200	200	200	200
ca-1,2-Dichloroethane		3500	500	500	200	10	10	200	200	200	200	200	200
1,1-Dichloroethane		U	500	500	200	10	10	200	200	200	200	200	200
Chloroform		500	500	500	200	10	10	200	200	200	200	200	200
1,2-Dichloroethane		U	500	360	200	10	10	200	200	200	200	200	200
2-Butanone		280	J	500	U	200	10	10	200	200	200	200	200
1,1,1-Trichloroethane		U	500	500	200	10	10	200	200	200	200	200	200
Carbon Tetrachloride		520	500	110	J	200	10	10	200	200	200	200	200
Benzene		U	500	U	200	10	10	200	200	200	200	200	200
Trichloroethane		100	J	500	U	200	10	10	200	200	200	200	200
1,2-Dichloropropane		U	500	500	200	10	10	200	200	200	200	200	200
Bromodichloromethane		500	500	200	200	10	10	200	200	200	200	200	200
ca-1,3-Dichloropropane		500	500	200	200	10	10	200	200	200	200	200	200
trans-1,3-Dichloropropene		500	500	200	200	10	10	200	200	200	200	200	200
1,1,2-Trichloroethane		U	500	U	200	10	10	200	200	200	200	200	200
Dibromochloromethane		500	500	200	200	10	10	200	200	200	200	200	200
Bromoform		500	500	47	J	200	10	10	200	200	200	200	200
4-Methyl-2-pentanone		420	J	500	69	J	200	10	10	200	200	200	200
Toluene		540	500	U	200	10	10	200	200	200	200	200	200
Tetrachloroethene		140	J	500	U	200	10	10	200	200	200	200	200
2-Hexanone		U	500	500	200	10	10	200	200	200	200	200	200
Chlorobenzene		78	J	500	58	J	200	10	10	200	200	200	200
Ethylbenzene		490	J	500	500	200	10	10	200	200	200	200	200
Xylenes, Total		500	500	500	500	200	10	10	200	200	200	200	200
Syrene		500	500	500	500	200	10	10	200	200	200	200	200
1,1,2-Tetrachloroethane		U	500	500	500	500	500	500	500	500	500	500	500
trans-1,2-Dichloroethane		U	500	500	500	500	500	500	500	500	500	500	500

Table 1.2 Results of the Analysis for Pesticides/PCB in Water
WAF 3-304 Waste Disposal Inc.

Client ID Location	WBLK08259801		3304-0048 B8		3304-0049 B7		3304-0050 B6		3304-0051 VV-55	
Analyte	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L
a-BHC	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
g-BHC	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
b-BHC	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Heptachlor	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
d-BHC	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Aldrin	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Heptachlor Epoxide	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
g-Chlordane	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
a-Chlordane	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Endosulfan (I)	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
p,p'-D D E	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Dieldrin	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Endrin	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
p,p'-D D D	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Endosulfan (II)	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
p,p'-D D T	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Endrin Aldehyde	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Endosulfan Sulfate	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Methoxychlor	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Endrin Ketone	U	0.02	U	0.02	U	0.1	U	0.1	U	0.02
Toxaphene	U	0.5	U	0.5	U	2.8	U	2.5	U	0.5
Aroclor 1016	U	0.3	U	0.3	U	1.4	U	1.3	U	0.3
Aroclor 1221	U	0.5	U	0.5	U	2.8	U	2.5	U	0.5
Aroclor 1232	U	0.3	U	0.3	U	1.4	U	1.3	U	0.3
Aroclor 1242	U	0.3	U	0.3	U	1.4	U	1.3	U	0.3
Aroclor 1248	U	0.3	U	0.3	U	1.4	U	1.3	U	0.3
Aroclor 1254	U	0.3	U	0.3	U	1.4	U	1.3	U	0.3
Aroclor 1260	U	0.3	U	0.3	U	1.4	U	1.3	U	0.3

Table 1.2 (cont.) Results of the Analysis for Pesticides/PCB in Water
WAF 3-304 Waste Disposal Inc.

Client ID Location	3304-0052 H6		3304-0053 H7		3304-0054 I7		3304-0055 C8		3304-0056 C5	
Analyte	Conc. µg/L	MDL µg/L								
a-BHC	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
g-BHC	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
b-BHC	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Heptachlor	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
d-BHC	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Aldrin	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Heptachlor Epoxide	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
g-Chlordane	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
a-Chlordane	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Endosulfan (I)	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
p,p'-D D E	U	0.1	U	0.1	U	0.02	4.8	0.1	U	0.02
Dieldrin	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Endrin	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
p,p'-D D D	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Endosulfan (II)	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
p,p'-D D T	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Endrin Aldehyde	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Endosulfan Sulfate	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Methoxychlor	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Endrin Ketone	U	0.1	U	0.1	U	0.02	U	0.1	U	0.02
Toxaphene	U	2.5	U	2.5	U	0.5	U	2.5	U	0.5
Aroclor 1016	U	1.3	U	1.3	U	0.3	U	1.3	U	0.3
Aroclor 1221	U	2.5	U	2.5	U	0.5	U	2.5	U	0.5
Aroclor 1232	U	1.3	U	1.3	U	0.3	U	1.3	U	0.3
Aroclor 1242	U	1.3	U	1.3	U	0.3	U	1.3	U	0.3
Aroclor 1248	1.3	1.3	7.7 W	1.3	U	0.3	U	1.3	U	0.3
Aroclor 1254	U	1.3	U	1.3	U	0.3	U	1.3	U	0.3
Aroclor 1260	U	1.3	5.5 W	1.3	U	0.3	U	1.3	U	0.3

Table 1.2 (cont.) Results of the Analysis for Pesticides/PCB in Water
WA# 3-304 Waste Disposal Inc.

Client ID Location	3304-0057 E3		3304-0058 C4		3304-0059 D6	
	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L	Conc. µg/L	MDL µg/L
a-BHC	U	0.02	U	0.02	U	0.02
g-BHC	U	0.02	U	0.02	U	0.02
b-BHC	U	0.02	U	0.02	U	0.02
Heptachlor	U	0.02	U	0.02	U	0.02
d-BHC	U	0.02	U	0.02	U	0.02
Aldrin	U	0.02	U	0.02	U	0.02
Heptachlor Epoxide	U	0.02	U	0.02	U	0.02
g-Chlordane	U	0.02	U	0.02	U	0.02
a-Chlordane	U	0.02	U	0.02	U	0.02
Endosulfan (I)	U	0.02	U	0.02	U	0.02
p,p'-D D E	U	0.02	U	0.02	U	0.02
Dieldrin	U	0.02	U	0.02	U	0.02
Endrin	U	0.02	U	0.02	U	0.02
p,p'-D D D	U	0.02	U	0.02	U	0.02
Endosulfan (II)	U	0.02	U	0.02	U	0.02
p,p'-D D T	U	0.02	U	0.02	U	0.02
Endrin Aldehyde	U	0.02	U	0.02	U	0.02
Endosulfan Sulfate	U	0.02	U	0.02	U	0.02
Methoxychlor	U	0.02	U	0.02	U	0.02
Endrin Ketone	U	0.02	U	0.02	U	0.02
Toxaphene	U	0.5	U	0.5	U	0.5
Aroclor 1016	U	0.3	U	0.3	U	0.3
Aroclor 1221	U	0.5	U	0.5	U	0.5
Aroclor 1232	U	0.3	U	0.3	U	0.3
Aroclor 1242	U	0.3	U	0.3	U	0.3
Aroclor 1248	1.4	0.3	U	0.3	U	0.3
Aroclor 1254	U	0.3	U	0.3	U	0.3
Aroclor 1260	0.8 W	0.3	U	0.3	U	0.3

Table 1.3 Results of the Analysis for TAL Metals in Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample ID Location Date Sampled	Method Blank 1		3304-0026		3304-0027		3304-0028		3304-0037	
	—	—	15 (8/13/98)	—	14 (8/13/98)	—	H4 (8/13/98)	—	G3 (8/13/98)	—
	Analyte	Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)
Aluminum	U	25	11400	—	6230	—	6100	—	4050	—
Antimony	U	4.0	U	375	358	—	U	334	U	344
Arsenic	U	4.0	935	—	1030	—	U	334	445	—
Banum	U	1.0	4750	—	3020	—	1050	—	673	—
Beryllium	U	1.0	U	93.7	U	83.7	U	83.5	U	86.1
Cadmium	U	1.0	U	93.7	U	83.7	U	83.5	U	86.1
Calcium	U	25	114000	—	37400	—	29500	—	10800	—
Chromium	U	2.0	1080	—	707	—	U	167	196	—
Cobalt	U	3.0	U	281	U	251	U	250	U	268
Copper	U	2.0	741	—	1230	—	193	—	U	172
Iron	U	10	36000	—	17300	—	6100	—	8140	—
Lead	U	2.5	5940	—	4400	—	1840	—	1320	—
Magnesium	U	25	9100	—	3730	—	4440	—	U	2150
Manganese	U	1.0	925	—	232	—	87.4	—	127	—
Mercury	U	0.20	U	21.9	U	21.0	U	20.9	U	19.6
Nickel	U	3.0	602	—	545	—	720	—	376	—
Potassium	U	200	42900	—	U	16700	—	16700	—	17200
Selenium	U	4.0	U	375	U	335	U	334	U	344
Silver	U	2.0	U	187	U	167	U	167	U	172
Sodium	U	250	635000	—	44500	—	49500	—	U	21500
Thallium	U	4.0	U	375	U	335	U	334	U	344
Vanadium	U	2.0	605	—	577	—	554	—	637	—
Zinc	U	10	3460	—	1550	—	U	835	U	861

**Table 1.3 (cont.) Results of the Analysis for TAL Metals in Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.**

Sample ID	3304-0039		3304-0040		3304-0044		3304-0045		3304-0001	
Location	H2 (8/13/98)		G2 (8/13/98)		F1 (8/13/98)		G1 (8/13/98)		C9 (8/13/98)	
Analyte	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)								
Aluminum	6340		10800		6260		8060		5400	
Antimony	U	351	U	349	639		418		399	
Arsenic	U	351	699		742		708		709	
Boron	759		3260		2740		3110		1500	
Beryllium	U	87.7	U	87.3	U	86.7	U	86.4	U	83.1
Cadmium	U	87.7	U	87.3	U	86.7	U	86.4	233	
Calcium	27200		95800		58000		58100		41100	
Chromium	U	175	778		402		353		233	
Cobalt	U	263	U	262	U	260	U	259	U	279
Copper	U	175	631		504		1010		U	186
Iron	3820		21700		21700		21800		26400	
Lead	4170		5970		9100		11500		2880	
Magnesium	3930		4440		2420		U	2160	3150	
Manganese	U	87.7	604		184		203		189	
Mercury	U	22.1	U	20.0	U	21.4	U	20.1	U	23.1
Nickel	929		787		827		999		708	
Potassium	U	17500	U	17500	U	17300	U	17300	U	18600
Selenium	U	351	U	349	U	347	U	345	U	372
Silver	U	175	U	175	U	173	U	173	U	186
Sodium	30700		4550		24300		U	21600	48200	
Thallium	U	351	U	349	U	347	U	345	U	372
Vanadium	624		795		1010		648		1430	
Zinc	U	877	937		U	867	U	864	2750	

**Table 1.3 (cont.) Results of the Analysis for TAL Metals in Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.**

Sample ID Location Date Sampled	3304-0002 D9 (8/13/98)		3304-0003 E9 (8/13/98)		3304-0004 F9 (8/13/98)		3304-0005 G9 (8/13/98)		3304-0013 E7 (8/13/98)	
	Analyte	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)						
Aluminum	6470		9510		6070		16500		13500	
Antimony	350		U	354	581		524		895	
Arsenic	2450		820		497		1710		1330	
Barium	3290		5280		782		16600		8570	
Beryllium	U	85.8	U	88.4	U	82.8	U	86.8	U	88.7
Cadmium	U	85.8	U	88.4	U	82.8	U	86.8	U	88.7
Calcium	16800		76300		19200		135000		41000	
Chromium	430		1000		U	186	1230		1560	
Cobalt	U	258	U	265	U	248	U	280	U	266
Copper	U	172	U	177	U	166	808		499	
Iron	39800		14400		6130		26000		47500	
Lead	5190		2280		828		14500		7180	
Magnesium	3180		5800		3200		5940		8570	
Manganese	220		188		U	82.8	383		1010	
Mercury	U	19.8	U	21.5	U	20.7	U	21.0	U	20.3
Nickel	474		616		605		920		801	
Potassium	U	17200	U	17700	U	16800	U	17400	U	17700
Selenium	U	343	U	354	U	331	U	347	U	355
Silver	U	172	U	177	U	166	U	174	U	177
Sodium	U	21500	40100		U	20700	43000		71800	
Thallium	U	343	U	354	U	331	U	347	U	355
Vanadium	1390		1080		511		1020		1450	
Zinc	4930		889		U	828	6240		915	

Table 1.3 (cont.) Results of the Analysis for TAL Metals in Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.

Sample ID Location Date Sampled	3304-0014 F7 (8/13/98)		3304-0015 G7 (8/13/98)		3304-0047 600 Gal Baker Tank (8/19/98)		3304-0048 TRC's Large Baker Tank (8/19/98)	
	Analyte	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)
Aluminum	14800		28000		16200		6580	
Antimony	528		701		749		539	
Arsenic	877		7630		469		U	390
Banum	11600		16000		4690		492	
Beryllium	U	88.9	U	92.3	U	89.8	U	97.5
Cadmum	U	88.9	U	92.3	U	89.8	U	97.5
Calcium	105000		338000		154000		11300	
Chromium	3050		2840		3640		U	195
Cobalt	U	267	U	277	U	269	U	292
Copper	350		1590		569		U	195
Iron	45700		102000		15800		2000	
Lead	5000		22900		3470		U	244
Magnesium	7710		26400		6160		3140	
Manganese	1170		6830		725		U	97.5
Mercury	U	20.1	U	22.4	U	23.7	U	22.8
Nickel	877		1340		1570		472	
Potassium	U	17800	27900		U	18000	80700	
Selenium	U	356	U	369	U	359	U	390
Silver	U	178	U	185	U	180	U	195
Sodium	22900		321000		43000		1560000	
Thallium	U	356	U	369	U	359	U	390
Vanadium	1100		1820		1030		U	195
Zinc	3110		7490		1810		U	975

**Table 1.3 (cont.) Results of the Analysis for TAL Metals in Water and Liquid Organic Wastes
WA # 3-304 Waste Disposal, Inc.**

Sample ID Location Date Sampled	Method Blank 2		3304-0048		3304-0049		3304-0050		3304-0051	
	B6 (8/20/98)		B7 (8/20/98)		B6 (8/20/98)		B6 (8/20/98)		WW-55 (8/20/98)	
	Analyte	Result ($\mu\text{g/L}$)	MDL ($\mu\text{g/L}$)	Result ($\mu\text{g/L}$)						
Aluminum	U	25	148000		63200		109000		7690	
Antimony	4.9	4.0	568		U	388	578		U	383
Arsenic	U	4.0	504		1360		6930		U	383
Banum	U	1.0	14500		3140		15300		242	
Beryllium	U	1.0	U	96.5	U	97.1	U	97.0	U	95.8
Cadmium	U	1.0	U	96.5	U	97.1	U	97.0	U	95.8
Calcium	U	25	384000		205000		480000		65600	
Chromium	U	2.0	557		401		691		U	192
Cobalt	U	3.0	U	290	U	291	U	291	U	287
Copper	U	2.0	459		U	194	637		U	192
Iron	U	10	276000		86300		163000		2390	
Lead	U	2.5	8150		948		3790		U	239
Magnesium	U	25	154000		31100		58800		36200	
Manganese	U	1.0	5580		1960		3610		594	
Mercury	U	0.20	U	22.8	U	22.5	U	23.7	U	23.5
Nickel	U	3.0	337		528		1080		U	287
Potassium	U	200	89700		52500		57200		U	19200
Selenium	U	4.0	U	388	U	388	U	388	U	383
Silver	U	2.0	U	193	U	194	U	194	U	192
Sodium	U	250	1360000		1020000		1340000		178000	
Thallium	U	4.0	U	388	U	388	U	388	U	383
Vanadium	U	2.0	579		773		1270		U	192
Zinc	U	10	2920		1230		2950		U	958

**Table 1.3 (cont.) Results of the Analysis for TAL Metals in Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.**

Sample ID Location Date Sampled	3304-0052 H6 (8/21/98)		3304-0053 H7 (8/21/98)		3304-0054 I7 (8/21/98)		3304-0055 C8 (8/21/98)		3304-0056 C5 (8/21/98)	
	Result (µg/L)	MDL (µg/L)								
Aluminum	403000		23500		24300		40100		50200	
Antimony	U	408	U	385	518		U	389	U	391
Arsenic	U	408	U	385	U	391	U	389	839	
Boron	6730		807		518		1150		2900	
Beryllium	U	102	U	96.2	U	97.7	U	97.2	U	97.8
Cadmium	U	102	U	96.2	U	97.7	U	97.2	U	97.8
Calcium	881000		155000		81300		161000		501000	
Chromium	739		U	192	U	195	U	194	240	
Cobalt	386		U	289	U	293	U	292	U	294
Copper	885		U	192	U	195	U	194	U	196
Iron	645000		24800		36000		45500		69900	
Lead	2280		258		U	244	1490		1720	
Magnesium	258000		37800		14700		18600		33200	
Manganese	16300		939		577		937		1350	
Mercury	119		U	22.1	U	24.0	U	21.8	U	24.8
Nickel	562		U	289	U	293	U	292	365	
Potassium	205000		54600		71100		31500		45800	
Selenium	U	408	U	385	U	391	U	389	U	391
Silver	U	204	U	192	U	195	U	194	U	196
Sodium	937000		915000		774000		692000		1070000	
Thallium	U	408	U	385	U	391	U	389	U	391
Vanadium	1390		U	192	U	195	U	194	413	
Zinc	5550		U	962	1670		U	972	1880	

**Table 1.3 (cont.) Results of the Analysis for TAL Metals in Water and Liquid Organic Waste
WA # 3-304 Waste Disposal, Inc.**

Sample ID Location Date Sampled	3304-0057 E3 (8/21/96)		3304-0058 C4 (8/21/96)		3304-0059 D6 (8/21/96)		
	Analyte	Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)	Result (µg/L)	MDL (µg/L)
Aluminum	35500		9710		741000		
Antimony	U	396	U	384	822		
Arsenic	U	396	U	384	4170		
Banum	3040		477		166000		
Beryllium	U	99.1	U	96.0	U	104	
Cadmium	U	99.1	U	96.0	297		
Calcium	282000		96900		1580000		
Chromium	U	198	U	192	6590		
Cobalt	U	297	U	288	865		
Copper	U	198	U	192	5590		
Iron	54300		3910		1620000		
Lead	1480		U	240	63200		
Magnesium	66800		83400		589000		
Manganese	2000		222		43800		
Mercury	U	25.0	U	22.2	36.2		
Nickel	U	297	U	288	2480		
Potassium	55600		43000		308000		
Selenium	U	396	U	384	U	416	
Silver	U	198	U	192	U	208	
Sodium	828000		1280000		1570000		
Thallium	U	396	U	384	U	416	
Vanadium	U	198	U	192	2800		
Zinc	1640		U	960	31300		

WC STOIL - WST

USEPA ERT

REAC, Edison, NJ
Contact: Gary Neuhart
(321) 321-0200
WORL: 03347-143-021-3304-01
EPA Contact: DB-C4-0222

Metals Wst Dil. 1
VOC
metals .2
VOC .3

CHAIN OF CUSTODY RECORD

COC # 3304-130898-0002

Project Name: WCI Site
Location: Santa Fe Springs CA
Site Phone: (322) 641-4816

Page No.: 1 of 2
Cooler #N/A
Lab: QBT Inc.
Contact: Dan Moore
(352) 332-3318

Line #	Tag	Sample #	Location	Matrix	Collected	Constituent/Preservative	Analytes Requested	MS MHD	Comments
*8	8	3304-0001	.00	LIQUID ORGANIC WASTE	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*9	9	3304-0002	.00	LIQUID ORGANIC WASTE	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*10	10	3304-0003	.00	LIQUID ORGANIC WASTE	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*11	11	3304-0004	.00	LIQUID ORGANIC WASTE	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*12	12	3304-0005	.00	LIQUID ORGANIC WASTE	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*13	13	3304-0006	.00	LIQUID ORGANIC WASTE	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*14	14	3304-0007	.00	LIQUID ORGANIC WASTE	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*15	15	3304-0008	.00	Liquid Organic Waste	8/13/98	10 ml VOMAC	TAL Metals & VOA		
*16	16	3304-0009	.00	Liquid Organic Waste	8/13/98	10 ml VOMAC	TAL Metals & VOA		

Special Instructions:

Q1/QC by MM

REFERENCE COC:

Item/Reason	Relinquished By	Date	Received By	Date	Time	Item/Reason	Relinquished By	Date	Received By	Date	Time
16 sample analysis	Gary Neuhart	9/14/98	J Kemp	9/15/98	1:300						

00043

SPLA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-130898-0002-A

3, Edison, NJ
id: Gary Newhart
321-4200
103347-14-001-3304-01
Contact: 88-C4-0022

Project Name: WDI Site
Location: Santa Fe Springs Ca
Site Phone: (522) 941-4318

Page No: 2 of 2
Coster & NAA
Lab: QBT Inc.
Contact: Dan Moore
(522) 932-3318

Lot	Tag	Sample #	Location	Matrix	Collector	Container/Preservative	Analytes Requested	MS	Comments
*1	8	3304-0026	15	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	
*2	8	3304-0027	14	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	
*3	8	3304-0028	14	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	
*4	8	3304-0029	03	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	
*5	8	3304-0030	12	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	
*6	8	3304-0040	02	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	
*7	8	3304-0044	F1	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	
*8	8	3304-0045	01	LIQUID ORGANIC WASTE	8/13/98	40 ml VOMAC	TAL Metals & VOC	MSD	

Instructions:

QA/QC by MJ

REFERENCE COC:

Issued	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
10/14/98	Gary Newhart	8/14/98	J. Kemp	8/15/98	1200						

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-170000-0004

REAC, Edison, NJ
 Contact: Gary Neustadt
 (609) 321-4200
 WOS: 00347-143-001-3304-01
 EPA Contract 68-C4-0022

Project Name: WDI Site
 Location: Santa Fe Springs Ca
 Site Phone: (562) 641-4316

Page No. 1 of 1
 Cooler # N/A
 Lab: QST Inc.
 Contact: Dan Moore
 (352)332-3318

Lab #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analytes Requested	M&S	Comments
	A	3304-0040	TRC's Large Baker Tank	Ground Water	8/18/98	10 ml VOA/C	Volatiles		
	D	3304-0040	TRC's Large Baker Tank	Ground Water	8/18/98	1 L poly/NaNO ₃ pH<2	metals, TAL		
	B	3304-0047	300 gal Baker Tank	Ground Water	8/18/98	10 ml VOA/C	TAL Metals & VOA	MSD	

Special Instructions:

QA/QC by [unclear] 8/19/98

REFERENCE COC:

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
<i>3/16/98 x53 Annual 11/17/98/18</i>											

562-044-2611

Aug 19 1998 07:25 PM

USEPA ERT

REAG, Edison, NJ
 Contact: Gary Newhart
 (732) 321-4214
 Work 03347-143-001-3304-01
 EPA Contract 08-04-0022

CHAIN OF CUSTODY RECORD

COC # 3304-210898-0012

Project Name: WDI Site
 Location: Santa Fe Springs Ca
 Site Phone: (352) 941-4816

Page No.: 01 of 01
 Cooler #: N/A
 Lab: QST Inc.
 Contact: Dan Moore
 (352)332-3316

Lab#	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analytes Requested	MS MSD	Comments
19	A	3304-0048	B6	Ground Water	8/20/1998	40 ml VOA/4C	Volatiles		List L WSTOIL 1
20	A	3304-0049	B7	Ground Water	8/20/1998	40 ml VOA/4C	Volatiles		
21	A	3304-0050	B8	Ground Water	8/20/1998	40 ml VOA/4C	Volatiles		
22	A	3304-0051	W483	Ground Water	8/20/1998	40 ml VOA/4C	Volatiles		
23	A	3304-0052	H8	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
24	A	3304-0053	H7	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
25	A	3304-0054	I7	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
26	A	3304-0055	C8	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
27	A	3304-0056	C5	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
28	A	3304-0057	E3	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
29	A	3304-0058	C4	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
30	A	3304-0059	D8	Ground Water	8/21/1998	40 ml VOA/4C	Volatiles		
31	A	3304-0060	T8	Water	8/22/1998	40 ml VOA/4C	Volatiles		List T WSTOIL 3
TOTAL									

Special Instructions: QA Vssad

REPORT SAMPLE #'S AS 0048, 0049 ect.

REFERENCE COC:

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
W5amples	GRC/2nd	8/21/98				FCL/EX	Jean Kip	8/22/98	10:00		

PAGE 5 OF 5
 AUG 27 1998 13:01 FR ESE GAINESVILLE B 352 333 6622 TO 91722224392-512 P.35
 60000

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-210898-0010

REAC, Edison, NJ
 Contact: Gary Newhart
 (732) 321-4214
 WO# 00347-143-001-3304-01
 EPA Contract 08-C4-0022

Project Name: WDI Site
 Location: Barita Fe Springs Co
 Site Phone: (352) 941-4010

Page No.: 01 of 01
 Cooler #: N/A
 Lab: QST Inc.
 Contact: Dan Moore
 (352) 332-3318

Date	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
7/20/98	D	3304-0048	B6	Ground Water	8/20/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
X/19	D	3304-0049	B7	Ground Water	8/20/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		List 2 WESTOTIL 1
20	D	3304-0050	B8	Ground Water	8/20/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
21	D	3304-0051	WV-65	Ground Water	8/20/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
22	D	3304-0052	H6	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
23	D	3304-0053	H7	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
24	D	3304-0054	I7	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
25	D	3304-0055	C8	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
26	D	3304-0056	C5	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
27	D	3304-0057	E3	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
28	D	3304-0058	C4	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
29	D	3304-0059	D8	Ground Water	8/21/1998	1 L poly/NaNO ₃ , pH<2	metals, TAL		
30	D								

Special Instructions:

DA needs REPORT SAMPLE #'S
 AS 0048, 0049 etc.

REFERENCE COC:

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
Mr Sample	Edmund Senter	8/22/98					FED-EX	8-24-98	John P. QST	8-24-98	10:00

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-210898-0011

REAC, Edison, NJ
 Contact: Gary Newhart
 (732) 321-4214
 WO#: 03347-143-001-3304-01
 EPA Contract 68-C4-0022

Project Name: WDI Site
 Location: Santa Fe Springs Ca
 Site Phone: (562) 941-4816

Page No.: 01 of 01
 Cooler #: N/A
 Lab: REAC
 Contact: Vinod Kansal
 (732) 321-4200

082498 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
561	B	3304-0048	B6	Ground Water	8/20/1998	32 oz Amber/4 C	Pesticides/PCB		
562	B	3304-0049	B7	Ground Water	8/20/1998	32 oz Amber/4 C	Pesticides/PCB		
563	B	3304-0050	B6	Ground Water	8/20/1998	32 oz Amber/4 C	Pesticides/PCB		
564	B	3304-0051	VW-65	Ground Water	8/20/1998	32 oz Amber/4 C	Pesticides/PCB		
565	B	3304-0052	H8	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		
566	B	3304-0053	H7	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		
567	B	3304-0054	I7	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		
568	B	3304-0055	C8	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		
569	B	3304-0056	C5	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		
570	B	3304-0057	E3	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		
571	B	3304-0058	C4	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		
572	B	3304-0059	D8	Ground Water	8/21/1998	32 oz Amber/4 C	Pesticides/PCB		

Special Instructions: QA VASED

REFERENCE COC:
PLEASE REPORT SAMPLE #'S AS 0048, 0049 etc.

Item/Reason	Relinquished By	Date	Received By	Date	Time	Item/Reason	Relinquished By	Date	Received By	Date	Time
All Samples	J. M. Johnson	8/24/98	C. Hasson	8/24/98	10:45	All Analytical	C. Hasson	8/24/98	R. K. Jeter	8/24/98	11:25 AM



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

QST Inc.
14220 West Newbury Road
Gainesville, FL 32607

Attn: Andrew Weitz

13 August 1998

Project # 3347-143-001-3304 Waste Disposal Inc

As per Weston REAC Purchase Order number 95782, please analyze samples according to the following parameters:

Analysis/Method	Matrix	# of samples
VOA/ CLP SOW	Organic Liquid	60
Metals/ CLP SOW	Organic Liquid	60

Data package: CLP Deliverables Requirements plus diskette deliverable.

Samples are expected to arrive at your laboratory on August 13, 1998. All applicable QA/QC analysis as per method, will be performed on our sample matrix. Preliminary sample result tables plus a signed copy of our Chain of Custody must be faxed to REAC 10 business days after receipt of the last samples. The complete data package is due 21 business days after receipt of last batch of samples.

CLP Format and deliverable requirements are requested.

Please submit all reports and technical questions concerning this project to John Johnson at (732) 321-4248 or fax to (732) 321-4392. Any contractual question, please call Cynthia Lentini at (732) 321-4296.

Sincerely,

Misty Barkley

Data Validation and Report Writing Group Leader
Roy F. Weston, Inc. / REAC Project

MB:jj Attachments

cc: R. Singhvi
B. Coakley
3304\non\mem\9808\sub\3304Con4

V. Kansal
Subcontracting File
C. Gasser

C. Lentini
G. Newhart
M. Barkley

00049





Roy F. Weston, Inc.
GSA Partner Depot
Bldg. 209 Annex (Bay P)
2800 Woodbridge Avenue
Edison, New Jersey 08837-3579
732-321-4200 • Fax 732-484-4021

QST Environmental
404 SW 140th Terrace
Newberry, Florida, 32669-3000

October 02, 1998

Dear Mr. Andrew Weitz,

Upon reviewing of the your analytical report for VOC analysis from WDI site, p/o contract: 3347-142-001-3304-01 (QST Lab Project No. 1298532G 0201) the following questions need some clarification.

A. Batch G92122:

1. Form 1/Analysis Data Sheet of MB*NONE*4 of 08/26/98 @ 10:11 AM is missing in the report. Please provide it.

B. Batch G92124:

✓ 1. On instrument VOA08, the initial and continuing calibrations identify the dichloroethenes as 1,2-dichloroethene (total). However Form 1 results sheets report the dichloroethenes as cis-1,2-dichloroethene and trans-1,2-dichloroethene.

On instrument VOA06, the initial and continuing calibrations, as well as the Form 1 results sheets identify the dichloroethenes as cis-1,2-dichloroethene and trans-1,2-dichloroethene, as well as 1,2-dichloroethene (total).

We can omit the totals extraneously reported on instrument VOA06. Please request the calibrations, blanks and samples on instrument VOA08 to include both isomers and send the raw data.

2. Form 1/Analysis data sheet of SP1*NONE*3 of 08/27/98 @ 03:53 PM indicates only one spiking compound - toluene. Please clarify if it is correct.

We would appreciate a response to these question within a day of receiving this letter as our report commitment to our client is rapidly approaching. If you have any question please call Mr. Yuri Nerush at 732-321-4217.

Thank you

Misty Barkley

Sincerely,

Misty Barkley

Data Validation and Report Writing Group Leader
Roy F. Weston, Inc. / REAC Project

Don - Could you x/or Kelly check
into these questions? You can reply
to John x 3627 plant: Am



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

QST Environmental
P.O.Box 1703,
Gainesville, FL 32602-1703

Attn: Andrew G. Weitz
Chemistry Project Manager

22 September 1998

QST Lab. Project # 1298532G 0201 (Metal Analyses)

Weston Project : Waste Disposal (#3304)

Please provide us with the following information in reference to the above-mentioned project:

- 1) Please confirm the Antimony result for Sample# 3304-0026(Westoil 1/MS/Duplicate) at page number 17 , 74 & 78 respectively.
- 2) Please provide the RPD limit for Soil Duplicate sample (Page 78 & 79).
- 3) Please confirm the spike added concentration for Mercury in sample# 3304-0026 S (page 74). And also in this context, please indicate how much volume was added at what standard Concentrations (for all the metals) to derive the final spike added concentrations for sample # 3304-0026 s (Page 74) & # 3304-0051 S (Page 75).
- 4) Please confirm the Prep.Bank (2) result for Antimony (Page 70) with respect to raw data (Page 152). Also please provide the initial & final volume used for Prep. Blank (1 & 2).

We would appreciate a response to these questions within two days of receiving this letter as our report commitments to our client is rapidly approaching. If you have any question, please call Mr. S. Chandra at 732-321-4245 or Fax response at 732-494-4021.

Sincerely,

Misty Barkley
Data Validation and Report Writing Group Leader
Roy F. Weston, Inc./REAC Project

00051



Appendix E

Appendix E

APPENDIX E
FINAL ANALYTICAL REPORT
PIEZOMETER PB4-PVC
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CALIFORNIA
MAY 1999

LM\FR\00085



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

DATE: 10 July 1998

TO: R. Singhvi EPA/ERTC
FROM: V. Kansal Analytical Section Leader *Vinod Kansal*
SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 3-304

Attached please find the following document prepared under this work assignment:

Waste Disposal, Inc. - Analytical Report

Central File WA # 3-304
W. Coakley
E. McGovern
M. Barkley

(w/attachment)
Work Assignment Manager (w/attachment)
Task Leader (w/attachment)
Data Validation and Report Writing
Group Leader (w/o attachment)



Introduction

REAC, in response to WA #2-304 and WA #3-304, provided analytical support for environmental samples collected from the Waste Disposal, Inc. site, located in Santa Fe Springs, CA, as described in the following table. The support also included QA/QC, data review, and preparation of an analytical report containing a summary of the analytical methods, the results, and the QA/QC results.

COC #	Number of Samples	Sampling Date	Date Received	Matrix	Analysis	Laboratory
05437	1	05/20/98	05/26/98	Oil	VOC BNA Metals Pest/PCB	Columbia Analytical Services

Case Narrative

Two different work assignment numbers may appear on documents due to a change in the REAC contract option period.

Data Package H275 — VOC in Oil

In the continuing calibration of June 3, 1998, the percent difference (%D) exceeded the QC limits for dichlorodifluoromethane (37) and chloromethane (31). Neither compound was detected in any of the associated samples; the data are not affected.

One surrogate recovery exceeded the QC limits in sample A12384. All data for this sample are considered estimated.

Data Package H273 — BNA in Oil

Sample A12384 was collected on May 20, 1998 and extracted on June 9, 1998. This time period exceeds the 14 day maximum holding time for BNA extraction. All detected and non-detected results are considered estimated.

In the continuing calibration of June 10, 1998, the percent difference (%D) exceeded the QC limits for the following compounds: N-nitroso-dimethylamine (28), benzyl alcohol (55), bis-(2-chloroisopropyl) ether (28), 2-nitroaniline (20.4), 4-nitroaniline (23), pyrene (21), and 3,3'-dichlorobenzidine (22). The non-detected results for benzyl alcohol are considered estimated in the method blank and in sample A12384. The concentration for pyrene is considered estimated in the laboratory control sample. The remaining compounds were not detected in any of the samples, and the data are not affected for those compounds.

One acid surrogate recovery was outside QC limits in the method blank. The data are not affected.

Data Package H277 — Metals in Oil

The method blank contained calcium (7.415 mg/kg) and magnesium (3 mg/kg). The concentrations of calcium and magnesium in the associated samples were greater than five times the method blank concentrations; the data are not affected.

Data Package H276 — Pesticides/PCBs in Oil

Because of interference from Aroclors present in the sample, pesticides reported as "not detected" may in fact be present at low levels.

Endosulfan I and 4,4'-DDE co-elute on the primary column. Thus, their method detection limits have been increased to 0.4 mg/kg.

Sample A12384 was collected on May 20, 1998 and extracted on June 8, 1998. This time period exceeds the 14 day maximum holding time for pesticide/PCB extraction. All detected and non-detected results are considered estimated.

The method blank for June 8, 1998 contained 0.04 mg/kg methoxychlor. This compound was not detected in the sample; the data are not affected.

In the continuing calibration of June 14, 1998, the percent difference (%D) for Aroclor 1016 on the secondary column (20) exceeded the QC limit. This compound was not detected in the sample; the data are not affected.

In the continuing calibration of June 10, 1998, the %D for beta-BHC on the secondary column (16) exceeded the QC limit. The data are not affected because this compound was not detected in the sample.

In the continuing calibration of June 11, 1998, the %D for methoxychlor on the secondary column (19) exceeded the QC limit. The data are not affected because this compound was not detected in the sample.

Both surrogate recoveries in the laboratory control duplicate were outside the QC limits. The recoveries for the laboratory control duplicate are considered estimated.

ANALYTICAL REPORT

Prepared by
Roy F. Weston, Inc.

Waste Disposal, Inc.
Santa Fe Springs, CA

July 1998

EPA Work Assignment No. 3-304
WESTON Work Order No. 03347-143-001-3304-01
EPA Contract No. 68-C4-0022

Submitted to
W. Coakley
EPA-ERTC

Edward R. McDonnell 7/10/98

E. McGovern Date

Task Leader

Analysis by:
Columbia Analytical Services

Vinod Kansal 7/10/98

V. Kansal Date

Analytical Section Leader

Prepared by:
N. McGuire

Vinod Kansal 7/10/98

E. Gilardi Date

Program Manager

Reviewed by:
M. Barkley

Table of Contents

Topic	Page Number
Introduction	Page 1
Case Narrative	Page 1
Summary of Abbreviations	Page 3
 Section I	
Analytical Procedure for VOC in Oil	Page 4
Analytical Procedure for BNA in Oil	Page 4
Analytical Procedure for Metals in Oil	Page 4
Analytical Procedure for Pesticides/PCBs in Oil	Page 4
Results of the Analysis for VOC in Oil	Table 1.1
Results of the Analysis for BNA in Oil	Table 1.2
Results of the Analysis for Metals in Oil	Table 1.3
Results of the Analysis for Pesticides/PCBs in Oil	Table 1.4
 Section II	
QA/QC for VOC	Page 11
Results of the Surrogate Recoveries for VOC in Oil	Table 2.1
Results of the LCS/LCSD Analysis for VOC in Oil	Table 2.2
QA/QC for BNA	Page 14
Results of the Surrogate Recoveries for BNA in Oil	Table 2.3
Results of the Laboratory Control Sample Analysis for BNA in Oil	Table 2.4
QA/QC for Metals	Page 17
Results of the Duplicate Sample Analysis for Metals in Oil	Table 2.5
Results of the Matrix Spike Analysis for Metals in Oil	Table 2.6
Results of the Laboratory Control Sample Analysis for Metals in Oil	Table 2.7
QA/QC for Pesticides/PCBs	Page 21
Results of the Surrogate Recoveries for Pesticides/PCBs in Oil	Table 2.8
Results of the LCS/LCSD Analysis for Pesticides/PCBs in Oil	Table 2.9
 Section III	
Communications	Page 24
Chain of Custody	Page 26
 Appendix A Data for VOC in Oil	Page H275 001
Appendix B Data for BNA in Oil	Page H273 001
Appendix C Data for Metals in Oil	Page H277 001
Appendix D Data for Pesticides/PCBs in Oil	Page H276 001

Appendices will be furnished on request.

Summary of Abbreviations

AA	Atomic Absorption				
B	The analyte was found in the blank				
BFB	Bromofluorobenzene				
BPQL	Below the Practical Quantitation Limit				
BS	Blank Spike				
BSD	Blank Spike Duplicate				
C	Centigrade				
D	(Surrogate and MS/MSD Table) this value is from a diluted sample and was not calculated (Result Table) this result was obtained from a diluted sample				
Dioxin	Denotes Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans and/or PCDD and PCDF				
CLP	Contract Laboratory Protocol				
COC	Chain of Custody				
CONC	Concentration				
CRDL	Contract Required Detection Limit				
CRQL	Contract Required Quantitation Limit				
DFTPP	Decafluorotriphenylphosphine				
DL	Detection Limit				
E	The value is greater than the highest linear standard and is estimated				
EMPC	Estimated maximum possible concentration				
ICAP	Inductively Coupled Argon Plasma				
ISTD	Internal Standard				
J	The value is below the method detection limit and is estimated				
LCS	Laboratory Control Sample				
LCSD	Laboratory Control Sample Duplicate				
MDL	Method Detection Limit				
MI	Matrix Interference				
MS	Matrix Spike				
MSD	Matrix Spike Duplicate				
MW	Molecular Weight				
NA	either Not Applicable or Not Available				
NC	Not Calculated				
NR	Not Requested				
NS	Not Spiked				
% D	Percent Difference				
% REC	Percent Recovery				
PQL	Practical Quantitation Limit				
PPBV	Parts per billion by volume				
QL	Quantitation Limit				
RPD	Relative Percent Difference				
RSD	Relative Standard Deviation				
SIM	Selected Ion Mode				
TCLP	Toxic Characteristics Leaching Procedure				
U	Denotes not detected				
W	Weathered analyte; the value should be regarded as estimated				
m ³	cubic meter	kg	kilogram	µg	microgram
L	liter	g	gram	pg	picogram
mL	milliliter	mg	milligram		
µL	microliter				
*	denotes a value that exceeds the acceptable QC limit				
	Abbreviations that are specific to a particular table are explained in footnotes on that table				
	Revision 10/16/97				

Analytical Procedure for VOC in Oil

The subcontract laboratory prepared the sample using SW846 method 5030A and analyzed the sample using SW846 method 8260A. The VOC results are listed in Table 1.1.

Analytical Procedure for BNA in Oil

The subcontract laboratory prepared the sample using SW846 method 3520B and analyzed the sample using SW846 method 8270B. The BNA results are listed in Table 1.2.

Analytical Procedure for Metals in Oil

The subcontract laboratory prepared the sample using SW846 method 3051M for all metals except mercury; method 7471A was used to prepare the sample for mercury analysis. The sample was analyzed for all metals except arsenic, mercury, selenium, and thallium using SW846 method 6010A. Method 7060A was used for the arsenic analysis, method 7471A for the mercury analysis, method 7740 for the selenium analysis, and method 7841 for the thallium analysis. The metals results are listed in Table 1.3.

Analytical Procedure for Pesticides/PCBs in Oil

The subcontract laboratory prepared the sample using SW846 method 3580 and analyzed the sample using SW846 method 8080. The pesticide/PCB results are listed in Table 1.4.

Table 1.1 Results of the Analysis for VOC in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No. Sample Location Matrix Dilution Factor	Method Blank		A12384 PB4-PVC	
	Oil		Oil	
	1	2	1	2
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Dichlorodifluoromethane (CFC 12)	U	0.05	U	0.10
Chloromethane	U	0.05	U	0.10
Vinyl Chloride	U	0.05	U	0.10
Bromomethane	U	0.05	U	0.10
Chloroethane	U	0.05	U	0.10
Trichlorofluoromethane (CFC 11)	U	0.05	U	0.10
Acetone	U	2	U	4
1,1-Dichloroethene (1,1-DCE)	U	0.05	U	0.10
Carbon Disulfide	U	0.05	U	0.10
Methylene Chloride	U	0.1	U	0.20
trans-1,2-Dichloroethene	U	0.05	U	0.10
1,1-Dichloroethane (1,1-DCA)	U	0.05	U	0.10
2-Butanone (MEK)	U	2	U	4
2,2-Dichloropropane	U	0.05	U	0.10
cis-1,2-Dichloroethene	U	0.05	U	0.10
Chloroform	U	0.05	U	0.10
Bromochloromethane	U	0.05	U	0.10
1,1,1-Trichloroethane (TCA)	U	0.05	U	0.10
1,1-Dichloropropene	U	0.05	U	0.10
Carbon Tetrachloride	U	0.05	U	0.10
1,2-Dichloroethane (EDC)	U	0.05	0.93	0.10
Benzene	U	0.05	18	0.10
Trichloroethene (TCE)	U	0.05	U	0.10
1,2-Dichloropropane	U	0.05	U	0.10
Bromodichloromethane	U	0.05	U	0.10
Dibromomethane	U	0.05	U	0.10
2-Hexanone	U	2	U	4
cis-1,3-Dichloropropene	U	0.05	U	0.10
Toluene	U	0.05	8.8	0.10
trans-1,3-Dichloropropene	U	0.05	U	0.10
1,1,2-Trichloroethane	U	0.05	U	0.10
4-Methyl-2-pentanone (MIBK)	U	2	U	4
1,3-Dichloropropane	U	0.05	U	0.10

Table 1.1 (cont.) Results of the Analysis for VOC in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No.	Method Blank		A12384 PB4-PVC	
Sample Location	Oil	1	Oil	2
Matrix	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
Dilution Factor				
Compound Name				
Tetrachloroethene (PCE)	U	0.05	U	0.10
Dibromochloromethane	U	0.05	U	0.10
1,2-Dibromoethane (EDB)	U	0.2	U	0.40
Chlorobenzene	U	0.05	U	0.10
1,1,1,2-Tetrachloroethane	U	0.05	U	0.10
Ethylbenzene	U	0.05	64	0.50
Xylenes, Total	U	0.05	76	0.50
Styrene	U	0.05	U	0.10
Bromoform	U	0.05	U	0.10
Isopropylbenzene (Cumene)	U	0.2	24	0.40
1,1,2,2-Tetrachloroethane	U	0.05	U	0.10
1,2,3-Trichloropropane	U	0.05	1.0	0.10
Bromobenzene	U	0.05	U	0.10
n-Propylbenzene	U	0.2	43	0.40
2-Chlorotoluene	U	0.2	U	0.40
4-Chlorotoluene	U	0.2	U	0.40
1,3,5-Trimethylbenzene	U	0.2	4.8	0.40
tert-Butylbenzene	U	0.2	U	0.40
1,2,4-Trimethylbenzene	U	0.2	58	2.0
sec-Butylbenzene	U	0.2	24	0.40
1,3-Dichlorobenzene	U	0.05	U	0.10
4-Isopropyltoluene	U	0.2	14	0.40
1,4-Dichlorobenzene	U	0.05	U	0.10
n-Butylbenzene	U	0.2	40	0.40
1,2-Dichlorobenzene	U	0.05	0.75	0.10
1,2-Dibromo-3-chloropropane (DBCP)	U	0.2	U	0.40
1,2,4-Trichlorobenzene	U	0.2	U	0.40
1,2,3-Trichlorobenzene	U	0.2	U	0.40
Naphthalene	U	0.2	220	2.0
Hexachlorobutadiene	U	0.2	U	0.40

Table 1.2 Results of the Analysis for BNA in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No.	Method Blank	A12384		
Sample Location	NA	PB4-PVC		
Matrix	Sodium Sulfate	Oil		
Dilution Factor	4.8	9.8		
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
N-Nitrosodimethylamine	U	130	U	250
Aniline	U	130	U	250
Bis(2-chloroethyl) Ether	U	50	U	100
Phenol	U	50	U	100
2-Chlorophenol	U	50	U	100
1,3-Dichlorobenzene	U	50	U	100
1,2-Dichlorobenzene	U	50	U	100
1,4-Dichlorobenzene	U	50	U	100
Benzyl Alcohol	U	50	U	100
Bis(2-chloroisopropyl) Ether	U	50	U	100
2-Methylphenol	U	50	U	100
Hexachloroethane	U	50	U	100
N-Nitrosodi-n-propylamine	U	50	U	100
3- and 4-Methylphenol Coelution	U	50	U	100
Nitrobenzene	U	50	U	100
Isophorone	U	50	U	100
2-Nitrophenol	U	50	U	100
2,4-Dimethylphenol	U	50	U	100
Bis(2-chloroethoxy)methane	U	50	U	100
2,4-Dichlorophenol	U	50	U	100
Benzoic Acid	U	130	U	250
1,2,4-Trichlorobenzene	U	50	U	100
Naphthalene	U	50	270	100
4-Chloroaniline	U	50	U	100
Hexachlorobutadiene	U	50	U	100
4-Chloro-3-methylphenol	U	50	U	100
2-Methylnaphthalene	U	50	660	100
Hexachlorocyclopentadiene	U	50	U	100
2,4,6-Trichlorophenol	U	50	U	100
2,4,5-Trichlorophenol	U	50	U	100
2-Chloronaphthalene	U	50	U	100
2-Nitroaniline	U	130	U	250
Acenaphthylene	U	50	U	100
Dimethyl Phthalate	U	50	U	100

Table 1.2 (cont.) Results of the Analysis for BNA in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No.	Method Blank	A12384		
Sample Location	NA	PB4-PVC		
Matrix	Sodium Sulfate	Oil		
Dilution Factor	4.8	9.8		
Compound Name	Conc. mg/kg	MDL mg/kg	Conc. mg/kg	MDL mg/kg
2,6-Dinitrotoluene	U	50	U	100
Acenaphthene	U	50	U	100
3-Nitroaniline	U	130	U	250
2,4-Dinitrophenol	U	130	U	250
Dibenzofuran	U	50	U	100
4-Nitrophenol	U	130	U	250
2,4-Dinitrotoluene	U	50	U	100
Fluorene	U	50	75	J
4-Chlorophenyl Phenyl Ether	U	50	U	100
Diethyl Phthalate	U	50	U	100
4-Nitroaniline	U	130	U	250
2-Methyl-4,6-dinitrophenol	U	130	U	250
N-Nitrosodiphenylamine	U	50	U	100
4-Bromophenyl Phenyl Ether	U	50	U	100
Hexachlorobenzene	U	50	U	100
Pentachlorophenol (PCP)	U	130	U	250
Phenanthrene	U	50	180	100
Anthracene	U	50	U	100
Di-n-butyl Phthalate	U	50	U	100
Fluoranthene	U	50	U	100
Pyrene	U	50	U	100
Butyl Benzyl Phthalate	U	50	U	100
3,3'-Dichlorobenzidine	U	130	U	250
Benz(a)anthracene	U	50	U	100
Chrysene	U	50	U	100
Bis(2-ethylhexyl) Phthalate	U	50	U	100
Di-n-octyl Phthalate	U	50	U	100
Benzo(b)fluoranthene	U	50	U	100
Benzo(k)fluoranthene	U	50	U	100
Benzo(a)pyrene	U	50	U	100
Indeno(1,2,3-cd)pyrene	U	50	U	100
Dibenz(a,h)anthracene	U	50	U	100
Benzo(g,h,i)perylene	U	50	U	100
Carbazole	U	50	U	100

Table 1.3 Results of the Analysis for Metals in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No. Sample Location Matrix	Method Blank			A12384 PB4-PVC Oil		
	NA Oil					
	Compound Name	Conc. mg/kg	MRL mg/kg	Dilution Factor	Conc. mg/kg	MRL mg/kg
Aluminum	U	5	1	250	5	1
Antimony	U	5	1	U	5	1
Arsenic	U	0.5	1	7.2	5	10
Barium	U	0.5	1	69	0.5	1
Beryllium	U	0.5	1	U	0.5	1
Cadmium	U	0.5	1	U	0.5	1
Calcium	7.4	5	1	670	5	1
Chromium	U	1	1	18	1	1
Cobalt	U	1	1	1	1	1
Copper	U	1	1	16	1	1
Iron	U	2	1	570	2	1
Lead	U	10	1	34	10	1
Magnesium	3	1	1	99	1	1
Manganese	U	0.5	1	13	0.5	1
Mercury	U	0.05	1	U	0.05	1
Nickel	U	5	1	34	5	1
Potassium	U	200	1	U	200	1
Selenium	U	0.5	1	U	2.5	5
Silver	U	1	1	U	1	1
Sodium	U	10	1	380	10	1
Thallium	U	0.5	1	U	1	2
Vanadium	U	1	1	30	1	1
Zinc	U	1	1	14	1	1

3304\DEL\AR\9807\Wstdsptb

00009

Table 1.4 Results of the Analysis for Pesticides/PCBs in Oil
WA# 3-304 Waste Disposal, Inc.

Sample No. Sample Location Matrix	Method Blank			A12384 PB4-PVC		
	Oil			Oil		
Compound Name	Conc. mg/kg	MDL mg/kg	Dilution Factor	Conc. mg/kg	MDL mg/kg	Dilution Factor
alpha-BHC	U	0.02	1	U	0.2	10
beta-BHC	U	0.02	1	U	0.2	10
gamma-BHC (Lindane)	U	0.02	1	U	0.2	10
delta-BHC	U	0.02	1	U	0.2	10
Heptachlor	U	0.02	1	U	0.2	10
Aldrin	U	0.02	1	U	0.2	10
Heptachlor Epoxide	U	0.02	1	U	0.2	10
gamma-Chlordane	U	0.02	1	U	0.2	10
Endosulfan I	U	0.04	1	U	0.4	10
alpha-Chlordane	U	0.02	1	U	0.2	10
Dieldrin	U	0.02	1	U	0.2	10
4,4'-DDE	U	0.04	1	U	0.4	10
Endrin	U	0.02	1	U	0.2	10
Endosulfan II	U	0.02	1	U	0.2	10
4,4'-DDD	U	0.02	1	U	0.2	10
Endrin Aldehyde	U	0.02	1	U	0.2	10
Endosulfan Sulfate	U	0.02	1	U	0.2	10
4,4'-DDT	U	0.02	1	U	0.2	10
Methoxychlor	0.04	0.02	1	U	0.2	10
Toxaphene	U	5	1	U	50	10
Aroclor 1016	U	1	1	U	1	1
Aroclor 1221	U	1	1	U	1	1
Aroclor 1232	U	1	1	U	1	1
Aroclor 1242	U	1	1	1.2	W	1
Aroclor 1248	U	1	1	2.5	1	1
Aroclor 1254	U	1	1	U	1	1
Aroclor 1260	U	1	1	2.2	1	1

W - Weathered analyte; the value should be regarded as estimated

QA/QC for VOC

Results of the Surrogate Recoveries for VOC in Oil

Prior to extraction, each sample was spiked with a three-component surrogate mixture consisting of dibromofluoromethane, toluene-d₈, and 4-bromofluorobenzene. The surrogate percent recoveries, listed in Table 2.1, ranged from 90 to 288. Fourteen of 15 percent recoveries are within acceptable QC limits.

Results of the LCS/LCSD Analysis for VOC in Oil

Percent recoveries for the laboratory control samples, listed in Table 2.2, ranged from 84 to 100. All 14 percent recoveries are within acceptable QC limits. The relative percent differences (RPDs), also listed in Table 2.2, ranged from 0 (zero) to 7. QC limits were not available for the RPDs.

Table 2.1 Results of the Surrogate Recoveries for VOC in Oil
WA# 3-304 Waste Disposal, Inc.

Analysis Date 06/03/98
Matrix Oil

Sample No.	Surrogate Compound	% Rec.	QC Limits
A12384	Dibromofluoromethane	103	75-132
A12384	Toluene-d8	101	85-109
A12384	4-Bromofluorobenzene	288	* 49-131
LCS	Dibromofluoromethane	105	75-132
LCS	Toluene-d8	95	85-109
LCS	4-Bromofluorobenzene	90	49-131
LCSD	Dibromofluoromethane	104	75-132
LCSD	Toluene-d8	95	85-109
LCSD	4-Bromofluorobenzene	92	49-131
Method Blank	Dibromofluoromethane	106	75-132
Method Blank	Toluene-d8	99	85-109
Method Blank	4-Bromofluorobenzene	106	49-131
A12384 DL	Dibromofluoromethane	106	75-132
A12384 DL	Toluene-d8	96	85-109
A12384 DL	4-Bromofluorobenzene	120	49-131

Table 2.2 Results of the LCS/LCSD Analysis for VOC in Oil
WA# 3-304 Waste Disposal, Inc.

Sample ID: Laboratory Control Sample

Compound Name	Certified Values		Results		Percent Recoveries		QC Limits	
	LCS ($\mu\text{g}/\text{kg}$)	LCSD ($\mu\text{g}/\text{kg}$)	LCS ($\mu\text{g}/\text{kg}$)	LCSD ($\mu\text{g}/\text{kg}$)	LCS %	LCSD %	RPD	% Rec.
1,1-Dichloroethene (1,1-DCE)	1.0	1.0	0.84	0.90	84	90	7	73-118
Benzene	1.0	1.0	0.98	1.0	98	100	2	78-116
Trichloroethene (TCE)	1.0	1.0	1.0	1.0	100	100	0	79-119
Toluene	1.0	1.0	0.92	0.95	92	95	3	77-118
Chlorobenzene	1.0	1.0	0.99	1.0	99	100	1	80-117
1,2-Dichlorobenzene	1.0	1.0	0.92	0.98	92	98	6	79-120
Naphthalene	1.0	1.0	0.91	0.97	91	97	6	57-135

QA/QC for BNA

Results of the Surrogate Recoveries for BNA in Oil

Prior to extraction, each sample was spiked with a six-component surrogate mixture consisting of 2-fluorophenol, phenol-d₅, nitrobenzene-d₅, 2-fluorobiphenyl, 2,4,6-tribromophenol, and terphenyl-d₁₄. The results of the surrogate recoveries are listed in Table 2.3. The surrogate percent recoveries ranged from 61 to 123. Seventeen of 18 percent recoveries are within acceptable QC limits.

Results of the Laboratory Control Sample Analysis for BNA in Oil

Percent recoveries for the laboratory control sample, listed in Table 2.4, ranged from 79 to 113. Eight of 11 percent recoveries were within acceptable QC limits.

Table 2.3 Results of the Surrogate Recoveries for BNA in Oil
WA# 3-304 Waste Disposal, Inc.

Analysis Date	06/09/98	QC Limits
Matrix	Oil	
Sample No.	Surrogate Compound	%Rec.
A12384	2-Fluorophenol	64
A12384	Phenol-d6	70
A12384	Nitrobenzene-d5	82
A12384	2-Fluorobiphenyl	78
A12384	2,4,6-Tribromophenol	75
A12384	p-Terphenyl-d14	99
LCS	2-Fluorophenol	107
LCS	Phenol-d6	102
LCS	Nitrobenzene-d5	61
LCSD	2-Fluorobiphenyl	70
LCSD	2,4,6-Tribromophenol	109
LCSD	p-Terphenyl-d14	91
Method Blank	2-Fluorophenol	110
Method Blank	Phenol-d6	108
Method Blank	Nitrobenzene-d5	87
Method Blank	2-Fluorobiphenyl	96
Method Blank	2,4,6-Tribromophenol	108
Method Blank	p-Terphenyl-d14	123

3304 DELAR 9807 Wstdsptb

00015

Table 2.4 Results of the Laboratory Control Sample Analysis for BNA in Oil
WA# 3-304 Waste Disposal, Inc.

Sample ID: Laboratory Control Sample

Compound Name	Certified Value (mg/kg)	Result (mg/kg)	Percent Recovery	QC Limits
Phenol	680	650	95	3-104
2-Chlorophenol	680	770	113	47-108
1,4-Dichlorobenzene	450	470	105	43-95
N-Nitrosodi-n-propylamine	450	400	89	44-105
1,2,4-Trichlorobenzene	450	500	110	46-96
4-Chloro-3-methylphenol	680	700	103	43-105
Acenaphthene	450	440	97	55-104
4-Nitrophenol	680	670	98	D-116
2,4-Dinitrotoluene	450	430	94	46-103
Pentachlorophenol (PCP)	680	760	110	8-138
Pyrene	450	360	79	48-123

QA/QC for Metals

Results of the Duplicate Sample Analysis for Metals in Oil

Sample A12384 was analyzed in duplicate. The 14 reported relative percent differences (RPDs), listed in Table 2.5, ranged from 3 to 36. Seven RPDs were not calculated because the metals were not detected in either sample, and two RPDs were not calculated because the metals were either below the detection limit or not detected in one of the two samples. No QC limits are available for this analysis.

Results of the Matrix Spike Analysis for Metals in Oil

Sample A12384 was chosen for the matrix spike (MS) analysis. The percent recoveries, listed in Table 2.6, ranged from 67 to 110. All 19 percent recoveries were within acceptable QC limits.

Results of the Laboratory Control Sample Analysis for Metals in Oil

Percent recoveries for the laboratory control sample, listed in Table 2.7, ranged from 89 to 103. All 19 percent recoveries were within acceptable QC limits.

**Table 2.5 Results of the Duplicate Sample Analysis
for Metals in Oil**
WA# 3-304 Waste Disposal, Inc.

Sample ID: A12384

Metal	Original Result mg/kg	Duplicate Result mg/kg	RPD
Aluminum	246	195	23
Antimony	U	U	NC
Arsenic	7.2	7.4	3
Barium	69	51	30
Beryllium	U	U	NC
Cadmium	U	U	NC
Calcium	669	556	18
Chromium	18	14	25
Cobalt	1	U	NC
Copper	16	12	29
Iron	573	439	26
Lead	34	28	19
Magnesium	99	84	16
Manganese	13	10	26
Mercury	U	U	NC
Nickel	34	27	23
Potassium	U	U	NC
Selenium	U	0.6	NC
Silver	U	U	NC
Sodium	380	547	36
Thallium	U	U	NC
Vanadium	30	22	31
Zinc	14	11	24

Table 2.6 Results of the Matrix Spike Analysis for Metals in Oil
WA# 3-304 Waste Disposal, Inc.

Sample ID:	A12384				
Metal	Spike Level mg/kg	Sample Result mg/kg	Spiked Sample Result mg/kg	Percent Recovery	QC Limits
Aluminum	360	246	606	100	60-130
Antimony	90	U	83	92	30-120
Arsenic	8	7.2	13	75	60-130
Barium	360	69	464	110	60-130
Beryllium	9	U	11	82	60-130
Cadmium	9	U	9	100	60-130
Chromium	36	18	52	94	60-130
Cobalt	90	1	95	104	60-130
Copper	45	16	61	100	60-130
Iron	180	573	694	67	60-130
Lead	90	34	118	93	60-130
Manganese	90	13	107	104	60-130
Mercury	0.5	U	1.9	95	60-130
Nickel	90	34	121	97	60-130
Selenium	2	U	1.8	90	60-130
Silver	9	U	9	100	60-130
Thallium	9	U	8.2	82	60-130
Vanadium	90	30	123	103	60-130
Zinc	90	14	98	93	60-130

**Table 2.7 Results of the Laboratory Control Sample Analysis
for Metals in Oil**
WA# 3-304 Waste Disposal, Inc.

Metal	Certified Value µg/L	Result µg/L	Percent Recovery	QC Limits
Aluminum	4000	3790	95	85-115
Antimony	1000	932	93	85-115
Arsenic	20	17.8	89	85-115
Barium	4000	3870	97	85-115
Beryllium	100	103	103	85-115
Cadmium	100	100	100	85-115
Chromium	400	373	93	85-115
Cobalt	1000	954	95	85-115
Copper	500	476	95	85-115
Iron	2000	1890	95	85-115
Lead	1000	940	94	85-115
Manganese	1000	965	97	85-115
Mercury	5.0	4.95	99	85-115
Nickel	1000	952	95	85-115
Selenium	5.0	4.8	96	85-115
Silver	100	96	96	85-115
Thallium	25.0	23.2	93	85-115
Vanadium	1000	964	96	85-115
Zinc	1000	938	94	85-115

QA/QC for Pesticides/PCBs

Results of the Surrogate Recoveries for Pesticides/PCBs in Oil

Prior to extraction, each sample was spiked with a surrogate solution consisting of tetrachloro-m-xylene and decachlorobiphenyl. The results of the surrogate recoveries are listed in Table 2.8. No QC limits were provided by the subcontract laboratory. The QC limits used by REAC were used as a guide. The surrogate percent recoveries ranged from 44 to 68. Four of eight percent recoveries were within the REAC QC limits.

Results of the LCS/LCSD Analysis for Pesticides/PCBs in Oil

Percent recoveries for the laboratory control samples, listed in Table 2.9, ranged from 45 to 60. The relative percent differences (RPDs), also listed in Table 2.9, ranged from 0 (zero) to 11. No QC limits were given for the percent recoveries or the RPDs.

Table 2.8 Results of the Surrogate Recoveries for Pesticides/PCBs in Oil
WA# 3-304 Waste Disposal, Inc.

Analysis Date: 06/11/98

Matrix: Oil

Sample No.	Surrogate Compound	%Rec.	QC Limits
A12384	Tetrachloro-m-xylene	63	60-150
A12384	Decachlorobiphenyl	61	60-150
Laboratory Control Sample	Tetrachloro-m-xylene	64	60-150
Laboratory Control Sample	Decachlorobiphenyl	48	*
Laboratory Control Sample Dup.	Tetrachloro-m-xylene	59	*
Laboratory Control Sample Dup.	Decachlorobiphenyl	44	*
Method Blank	Tetrachloro-m-xylene	68	60-150
Method Blank	Decachlorobiphenyl	46	*

Table 2.9 Results of the LCS/LCSD Analysis for Pesticides/PCBs in Oil
WA# 3-304 Waste Disposal, Inc.

Sample ID: Laboratory Control Sample

Compound Name	Certified Value		LCS Conc. (mg/kg)	LCSD Conc. (mg/kg)	LCS % Rec.	LCSD % Rec.	RPD
	LCS (mg/kg)	LCSD (mg/kg)					
gamma-BHC (Lindane)	2.0	2.0	1.2	1.1	60	55	9
Heptachlor	2.0	2.0	1.1	1.0	55	50	10
Aldrin	2.0	2.0	1.1	1.0	55	50	10
Dieldrin	2.0	2.0	1.0	0.9	50	45	11
Endrin	2.0	2.0	1.0	0.9	50	45	11
4,4'-DDT	2.0	2.0	0.9	0.9	45	45	0



June 18, 1998

Service Request No: K9803343

John Johnson
Roy F. Weston, Inc.
GSA Raritan Depot, Bldg. 209 Annex, Bay F
Raritan Center
Edison, NJ 08837-3679

Re: Waste Disposal Inc./03347142-001-2304-01

Dear John:

Enclosed are the results of the sample(s) submitted to our laboratory on May 27, 1998. Preliminary results were transmitted via facsimile on June 17, 1998. For your reference, these analyses have been assigned our service request number K9803343.

All analyses were performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions. My extension is 260.

Respectfully submitted,

Columbia Analytical Services, Inc.

Teena Jones
Teena Jones
Project Chemist

TJ/jcb

Page 1 of 1/17

H277 0004
00024

- REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022

CHAIN OF CUSTODY RECORD

Project Name: WASTE DISPOSAL INC.
Project Number: 03347-142-001-2304-01
RFW Contact: Ed McGOVERN Phone: 321-4200

3343
No: 05437

SHEET NO. 1 OF 1

052290-

Sample Identification

Analyses Requested

Matrix:

SD - Sediment
DS - Drum Solids
DL - Drum Liquids

PW - Potable Water
 GW - Groundwater
 SW - Surface Water
 SL - Sediment

S - Soil
W - Water
O - Oil
A - Air

Special Instructions:

Analyze the organic
(upper layer) only.

SUB OUT TO
COLUMBIA Analytical 5-26-98 QA/QC C. P. S. M. B.
(CB)

FOR SUBCONTRACTING USE ONLY

**FROM CHAIN OF
CUSTODY #**

Appendix F

APPENDIX F
FINAL ANALYTICAL REPORT
TENAX/CARBON MOLECULAR SIEVE VAPOR SAMPLES
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CALIFORNIA
MAY 1999

LM\FR\00085



Roy F. Weston, Inc.
GSA Raritan Depot
Bldg. 209 Annex (Bay F)
2890 Woodbridge Avenue
Edison, New Jersey 08837-3679
732-321-4200 • Fax 732-494-4021

DATE: 19 October 1998
TO: R. Singhvi EPA/ERTC
FROM: V. Kansal Analytical Section Leader *Vinod Kansal*
SUBJECT: DOCUMENT TRANSMITTAL UNDER WORK ASSIGNMENT # 3-304

Attached please find the following document prepared under this work assignment.

Waste Disposal Inc. Site - Analytical Report

Central File WA #3-304	(W/attachment)
Edward McGovern	Task Leaders
Gary Newhart	
William Coakley	Work Assignment Manager



ANALYTICAL REPORT

Prepared by
Roy F. Weston, Inc.

Waste Disposal Inc. Site
Santa Fe Springs, CA

October, 1998

EPA Work Assignment No. 3-304
Weston Work Order No. 03347-143-001-3304-01
EPA Contract No. 68-C4-0022

Submitted to
William Coakley
EPA-ERTC

Edward McGovern 10/13/98
Date
Task Leader
Gary Newhart 10/13/98
Date
Task Leader
Vinod Kansal 10/15/98
Date
Analytical Section Leader
Edward F. Gilardi 10/16/98
Date
Program Manager

Analysis by:
JungSug Jang
Gerald Ball

Prepared by:
JungSug Jang
Gerald Ball
Robert Isaacs

Reviewed by:
Yi-Hua Lin

CONTENTS

1.0 INTRODUCTION

2.0 GC/MS TENAX/CMS PROCEDURES

- 2.1 Preparation of Tenax/CMS Tube
- 2.2 Tenax/Tube Analysis
- 2.3 Modified Tenax/Tube Analysis
- 2.4 Calibration and Sampling Spiking
- 2.5 Compound Identification/Quantitation
- 2.6 QA/QC

3.0 GC/MS CANISTER PROCEDURES

- 3.1 Sample Pressurization
- 3.2 Summa Canister Analysis
- 3.3 Calibration and Sample Spiking
- 3.4 Compound Identification/Quantitation
- 3.5 QA/QC

4.0 RESULTS

5.0 DISCUSSION

LIST OF TABLES

- Table 1 - Instrument Conditions for Summa Canisters and Tenax/CMS Tubes
- Table 2 - Concentrations, Retention times and Quantitation Ions for Air Toxic Standards
- Table 3 - Air Toxic Target Compound Results for Tenax/CMS Tube Samples
- Table 4 - Air Toxic Target Compound Results for Tenax/CMS Tube Samples Desorbed into Tedlar Bags
- Table 5 - Air Toxic Target Compound Results for Summa Canister Samples
- Table 6 - Air Toxic BS/BSD Summary for Tenax /CMS Tube Samples Desorbed into Tedlar Bags
- Table 7 - Air Toxic MS/MSD Summary for Summa Canister Samples
- Table 8 - Air Toxic Target Compound Results for 10 nL Standard

APPENDIX A - CHAINS-OF-CUSTODY

APPENDIX B - TENAX/CMS DATA

APPENDIX C - TENAX/CMS DESORBED INTO TEDLAR BAGS DATA

APPENDIX D - SUMMA CANISTER DATA

1.0 INTRODUCTION

Tenax/CMS tube samples and Summa canister samples were collected at Waste Disposal Inc. Site in Santa Fe Springs, California on 15 through 27 August 1998 and on 02 September 1998. Eighty six (86) Tenax/ CMS samples and twelve (12) Summa canister samples were transported back to the Environmental Response Team Center (ERTC) facility in Edison, New Jersey. Ten (10) Tenax/CMS tube samples were not analyzed as requested. These samples were 13740 (F7), 13758 (H4), 13759 (I4), 13765 (A4), 13774 (D4), 13817 (C9), 13819 (F7), 13824 (C9), 13851 (G3), and 13868 (F2). All other samples were analyzed by the Response Engineering and Analytical Contract (REAC) using gas chromatography/mass spectrometry (GC/MS) between 19 August 1998 and 10 September 1998.

2.0 GC/MS TENAX CMS PROCEDURES

2.1 Preparation of Tenax/CMS Tubes

Tenax/CMS tubes were provided in sealed glass ampules by Supelco, Inc. The method used for preparation of the cartridges was a modification of "Standard Operating Procedure (SOP) for Preparation of Clean Tenax Cartridges"¹. The tubes contained 150 milligram (mg) Tenax/TA 35/50 mesh and 150 mg CMS 60/80 mesh packed into a 6 millimeter (mm) x 120 mm borosilicate glass tube with Pyrex glass wool on each end and between each phase. The tubes were conditioned by the manufacturer with a nitrogen gas flow at 240 Celsius (°C) for twelve hours.

2.2 Tenax/CMS Tube Analysis

Prior to sample analysis, some tube samples were dry purged for 30 minutes to 60 minutes at a flow rate of 10 milliliter/minute (mL/min) due to high moisture content. Samples were analyzed by thermal desorption of the cartridges and cryogenic trapping of the analytes, followed by cryofocussing onto the head of a fused silica capillary column, prior to GC/MS analysis² (REAC SOP # 1705). An Entech model 5100TD automatic desorber and a Hewlett-Packard 5890 gas chromatograph (GC) and 5971A mass selective detector (MSD) controlled by a ChemStation software were used. Table 1 lists cryogenic trap and GC/MS conditions.

Tube samples were attached to the 5100TD automatic desorber. Sample analysis began with cool desorbing at 20 °C at a flow rate of 40 mL/min for the first 50 mL, followed by thermal desorbing at 260 °C at a flow rate of 150 mL/min for 500 mL. An aliquot of each sample was transferred to the Entech 7000 preconcentrator by cooling the first cryotrap, module-1 (M-1), to -160 °C. Once M-1 was cooled, a specified aliquot of sample or standard was cryotrapped. This aliquot was transferred to a Tenax trap, M-2, to eliminate most of the water, and then cyrofocussed at a third trap, M-3, before injection by direct heating.

2.3 Modified Tenax/CMS Tube Analysis

Because most samples were suspected of having a high concentration of target compounds and hydrocarbons, most tubes were analyzed using a modified method with a single tube desorber. The desorber was connected to a cylinder of ultra zero grade air. A mass flow controller was inserted between the air cylinder and the single tube desorber to control the air flow. At the end of the tube desorber, a 1/16" stainless steel line was attached to a 1/4" Teflon tube about 3" long. The 1/4" Teflon tube was connected to the Tedlar bag.

¹ U. S. Environmental Protection Agency. EMSL/RTP-SOP-EMD-013.

² U. S. Environmental Protection Agency. "Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air", EPA 600/4-84-041, April 1984.

After placing each tube sample into the desorber, air was introduced at a flow rate of 50 mL/min for 20 minutes and the desorber was heated to 240°C. The tube desorption was completed when the Tedlar bag was filled to its 1 liter (L) capacity. The bag was transferred from the desorption apparatus to a position on the canister autosampler, and analyzed using the TO-14 method. Since the sample was desorbed into the bag, the analyst could take a small enough aliquot to bring concentrations within the calibration range. Samples were analyzed by thermal desorption and cryogenic trapping of aliquots from Tedlar bag via a canister autosampler (REAC SOP # 1705), followed by cryofocussing and analysis by GC/MS. An Entech model 7016CA canister autosampler and an Entech 7000 preconcentrator were used for trapping sample aliquot. The samples were analyzed using a Hewlett-Packard 5890 GC and 5971A MSD running ChemStation software. Table 1 lists cryogenic trap and GC/MS conditions.

2.4 Calibration and Sample Spiking

A twenty-five (25) compound standard was provided from compressed gas cylinders No. ALM009519 by Scott Specialty Gases, Inc. This standard was diluted from 1 part per million in volume (ppmv) to 20 parts per billion in volume (ppbv) in a Summa canister. An initial calibration range was obtained by varying the volume of the standards spiked from 50 to 1250 mL, equivalent to 1 nanoliter (nL) to 25 nL, respectively. Daily standards were obtained by analyzing the 20 ppbv standard at 500 mL (equivalent to 10 nL).

Bromochloromethane (BCM) and p-bromofluorobenzene (BFB) were added as internal and surrogate standard to all samples and standards. Both were provided in a compressed gas cylinder No. ALM046281 by Scott Specialty Gases. This standard was diluted from 1 ppmv to 100 ppbv in a Summa canister. An aliquot of 100 mL (equivalent to 10 nL) was spiked to all standards and samples prior to hot desorption. To pass BFB to validate the mass spectrometer tuning, an aliquot of 70 mL (equivalent to 50 nanograms of BFB) was analyzed alone. Standard cylinder Identification Numbers (ID), concentrations, retention times (RT) for the daily standard, and their quantitation ions are listed in Table 2.

2.5 Compound Identification / Quantitation

Contaminants in samples were identified and quantitated by the ChemStation software. This software was designed in order to tentatively identify and quantitate target compounds, using reconstructed and extracted ion chromatogram which were matched with retention time windows. The report format prints the identified compound mass spectra (both raw and background subtracted), quantitation, and qualifier ion chromatogram.

Target compounds results are originally reported in nL. The limit of quantitation (LOQ) for all the target compounds is estimated to be 1 nL, being the lowest volume of standard on the calibration curve. The target compound results are calculated in ppbv, using the following equation:

$$\text{Concentration (ppbv)} = \frac{\text{Quant Result (nL)} \times 1000}{\text{Sample Volume (mL)}}$$

The quantitation limits ranged from 1 ppbv to 4000 ppbv, based upon various sample volumes.

2.6 QA/QC

The following QA/QC procedures were performed for this analysis.

- The HP 5971A was tuned daily for perfluorotributylamine (PFTBA) to meet abundance criteria for p-bromofluorobenzene as listed in EPA Method 624. Tuning results are included in the QA/QC data section (Appendix B). The tune was adjusted when necessary.

- An initial calibration on Tenax/CMS tubes was performed on 19 August 1998. Five initial calibrations for the modified analysis using Tedlar bag were run on 21, 26, 27, and 28 August 1998 and 03 September 1998. All compounds met the acceptance criteria of having relative standard deviation (RSD) of less than 25 %, except trichlorofluoromethane (25.44 %) on 21 August 1998, chloromethane (50.52 %) on 27 August 1998, and chloroethane (30.48 %) on 28 August 1998.
- Three continuing calibrations on Tenax/CMS tubes were performed on 21 and 31 August 1998 and on 01 September 1998. Six continuing calibrations for the modified analysis were run on 23, 24, 25, 29, and 31 August 1998 and on 04 September 1998. All compounds met the acceptance criteria of having relative percent deviation (RPD) of less than 25%, except chloroethane (25.3 %) on 21 August 1998, chloroethane (25.3 %) on 24 August 1998, chloroethane (27.4 %) on 29 August 1998, and styrene (31.0 %) on 01 September 1998.
- A surrogate standard of BFB was added to all standards and samples. Percent recoveries for samples were calculated against daily standards, and are listed in Table 3 and Table 4. Recoveries should be within 70% to 130% for BFB.
- Five pairs of Tenax/CMS tube samples were taken at the same location with different sample numbers. Samples 13841 and 13842 (C9) were used for Tenax/CMS tube sample replicate. The remaining pairs of samples 13854 and 13855, 13865 and 13866, 13754 and 13755 were analyzed for the replicates of modified sample analyses. One pair of samples 13741 and 13746 was not used as replicate because the result of sample 13741 was not obtained.
- Method blanks were analyzed after the initial and continuing calibrations, and system blanks were analyzed after selected samples to check for carryover and to ensure the system was clean.
- Prior to the analysis of samples desorbed into Tedlar bags, a desorption test was run. A Tenax/CMS tube spiked with 500 mL of the 20 ppbv standard (equivalent to 10 nL) was desorbed into a Tedlar bag, and a 500 mL aliquot of the bag was analyzed.
- One set of blank spike and blank spike duplicate (BS/BSD) was analyzed on a Tedlar bag blank by spiking the blank bag with 500 mL of the 20 ppbv standard (equivalent to 10 nL). There is no specific recovery range established according to SOP # 1705.

3.0 GC/MS SUMMA CANISTER PROCEDURES

3.1 Sample Pressurization

The Summa canisters used for sampling were cleaned by REAC according to REAC SOP #1703, and were selected from batches certified clean by REAC. Before analysis, all canisters were pressurized. A pressurizing train was setup with a pressure gauge accurate to ± 0.1 pounds per square inch absolute (psia). The gauge and train were purged with nitrogen gas for 20 minutes. The train was then connected to a canister sample, an initial reading was taken. Nitrogen was added to all canister samples to bring the canister pressure to two or three times the initial reading, except samples SG04314, SG04318, and SG04320 (Trip Blank). The following are the initial and final pressures for the canister samples:

<u>Sample</u>	<u>Initial Pressure (psia)</u>	<u>Final Pressure (psia)</u>
SG04311, F7	13.5	40.5
SG04312, G5	13.4	40.2
SG04313, H2	12.9	38.7

SG04314, E9	2.6	26.0
SG04315, F9	13.2	39.6
SG04316, G1	12.7	38.1
SG04318, G7	3.5	35.0
SG04319, C3	13.4	40.2
SG04320, Trip Blank	0.4	20.0
SG04321, B5	13.4	40.2
SG04322, Ambient Air @ Decon Area	13.5	27.0
A14916, Trench 1	14.0	42.0

Due to the high concentration of target compounds such as benzene, toluene, ethylbenzene, and xylenes, a serial pressurization was made for all samples using certified clean canister except for samples SG04311, SG04322, A14916, and SG04320. An aliquot of 1 psia or 2 psia pressure was transferred from the pressurized sample canisters and was brought up to 40 psia.

3.2 Summa Canister Analysis

Samples were analyzed by thermal desorption and cryogenic trapping of aliquots from Summa canisters via a canister autosampler (REAC SOP # 1705), followed by cryofocussing and analysis by GC/MS. An Entech model 7016CA canister autosampler connected to an Entech 7000 preconcentrator prepared the sample for analysis. The samples were analyzed using a Hewlett-Packard 5890 GC and 5971A MSD running ChemStation software. Table 1 lists cryogenic trap and GC/MS conditions.

All canisters were attached to the Summa canister autosampler. Sample analysis began by cooling the first cryotrap M-1 to -160°C. Once M-1 was cooled, a specified aliquot of sample or standard was cryotrapped. This aliquot was transferred to a Tenax trap, M-2, to eliminate most of the water, and then cryofocussed at a third trap, M-3, before injection by direct heating.

3.3 Calibration and Sample Spiking

A twenty-five (25) compound standard was provided in compressed gas cylinder No ALM009519 by Scott Specialty Gases, Inc. This standard was diluted from 1 part per million volume (ppmv) to 20 part per billion volume (ppbv) in a Summa canister. An initial calibration range was obtained by varying the volume of the 20 ppbv standard from 50 to 1250 milliliters (mL), equivalent to 1 nanoliter (nL) to 25 nL, respectively. Daily standards were obtained by analyzing the 20 ppbv standard at 500 mL (equivalent to 10 nL).

Bromochloromethane (BCM) and p-bromofluorobenzene (BFB) were added to both samples and standards. Both were provided in compressed gas cylinder No. ALMO046281 by Scott Specialty Gases. BCM was used as an internal standard and BFB was used as a surrogate standard. This standard was diluted from 1 ppmv to 100 ppbv in a Summa canister. An aliquot of 100 mL (equivalent to 10 nL) was added to all standards and samples. To pass BFB to validate the mass spectrometer tuning, an aliquot of 70 mL (equivalent to 50 nanograms of BFB) was analyzed alone. Standard cylinder I.D. numbers, concentrations, retention times for the daily standard, and their quantitation ions are listed in Table 2.

3.4 Compound Identification/Quantitation

Contaminants in samples were identified and quantitated by the ChemStation software. This software uses reconstructed, extracted ion chromatogram matched with retention time windows to tentatively identify and quantitate target compounds. The report format prints the identified compound mass spectra (both raw and background subtracted), quantitation, and qualifier ion chromatogram.

Target compound results are originally reported in nL. The limit of quantitation (LOQ) for all the target compounds is estimated to be 1 nL, being the lowest volume of standard on the calibration curve. The target compound results are calculated in ppbv using the following equation:

$$\text{Concentration (ppbv)} = \frac{\text{Quant Result (nL)} \times 1000}{\text{Undiluted Sample Volume (mL)}}$$

The quantitation limits ranged from 4 ppbv for a 250 mL undiluted sample aliquot, to 9600 ppbv for 50 mL of a 480:1 dilution of sample aliquot.

3.5 QA/QC

The following QA/QC procedures were performed for this analysis:

- The HP 5971A was tuned daily for perfluorotributylamine (PFTBA) to meet abundance criteria for p-bromofluorobenzene as listed in EPA Method 624. Tuning results are included in the QA/QC data section (Appendix B). The tune was adjusted when necessary.
- An initial calibration by automated injection from a Summa canister standard at 20 ppbv was performed on 03 September 1998. All compounds met the acceptance criteria of having relative standard deviation (RSD) of less than 25 %, except chloroethane (29.24 %) and trichlorofluoromethane (26.8 %).
- Continuing calibrations were performed on 09 and 10 September 1998 to satisfy the 12 hour requirement. All compounds met the acceptance criteria of having relative percent deviation (RPD) of less than 25%, except styrene (40.3 % and 43.1 %) on 09 and 10 September 1998, respectively.
- A surrogate standard of BFB was added to all standards and samples. Recoveries should be within 70% to 130% for BFB.
- Method blanks were analyzed after the continuing calibrations, and system blanks were analyzed after selected samples to check for carryover and to ensure the system was clean.
- A replicate was analyzed on sample SG04314 (E9).
- One set of matrix spike and matrix spike duplicate (MS/MSD) was analyzed on sample SG04322 (Ambient Air @ Decon Area) by spiking the sample with 500 mL of the 20 ppbv standard. There is no specific recovery range established according to SOP # 1705.

4.0 RESULTS

Tenax/CMS, Tedlar Bag, and Summa canister target compound results are listed in Table 3, Table 4, and Table 5, respectively. Results are reported in ppbv. Table 6 and Table 7 present recoveries for the BS/BSD and MS/MSD, respectively. The results of the Tenax/CMS tube to Tedlar bag desorption test are in Table 8. The chains-of-custody are in Appendix A. Tenax/CMS tube, Tedlar Bag, and Summa canister data are in Appendix B, Appendix C, and Appendix D, respectively.

In Appendices B, C, and D, the Analysis Log is followed by the calibration package for each day of analysis. The calibration package includes the daily analysis log, BFB tune, and initial or continuing calibration quant report. The quant report lists the retention time, quantitation ion, peak area, and concentration in nL. Concentrations listed on this quant reports are generated by using the average response factors of the initial calibration and the response factors of the continuing calibrations.

The following is a list of the QA/QC flags used in qualifying the results:

- A - Assumed volume for method blank.
- B - Concentration less than 3 times method blank value.
- C - Compound calibration relative standard deviation (RSD) >25% (concentrations calculated by average response factor only).
- E - Concentration exceeded calibration limit (25 nL).
- J - Below 1.0 nL quantitation limit.
- U -Not detected.

5.0 DISCUSSION

Early in the analysis of the Waste Disposal Tenax/CMS tubes, the runs of five samples were lost due to GC/MS detector saturation. Since the volume already adsorbed into the tubes could not be lowered, REAC devised a new desorption technique that transferred the contents of the tube to a Tedlar bag. This allowed sample aliquots small enough to give a semi-quantitative analysis. The lowest volume taken from the bags was 50 mL because an Entech 7000 preconcentrator was designed for taking sample volume ranging from 50 to 1000 mL. If a volume smaller than 50 mL is trapped, it could give unacceptably large errors due to the inherent start/stop errors when using mass flow controllers³. The accuracy of the new technique was established by a desorption test, where a tube spiked with standard was desorbed into a bag and gave recoveries of 68-124 %. Of the remaining tube samples, fifteen (15) were analyzed as received, and fifty-six (56) were desorbed into bags and analyzed. If detector saturation or very high concentrations occur in future Tenax/CMS analyses, this desorption technique could be used again to give a successful analysis or results within a calibration range.

As indicated in the Table 3 and Table 4, most of tube samples contained vinyl chloride, trifluoromethane, benzene, toluene, tetrachloroethylene, ethylbenzene, and xylenes ranging from 19 ppbv to 1,200,000 ppbv. As shown in Table 5, most of Summa canister samples also had vinyl chloride, benzene, toluene, ethylbenzene and xylenes. The concentrations ranged from 16 ppbv to 210,000 ppbv. All Summa canister samples had needed serial dilutions because samples contained very high concentration of target compounds.

The samples were spiked with 10 nL of internal standard BCM and surrogate standard BFB during analysis. The surrogate recoveries ranged from 100 to 156%. Eighteen (18) of the samples had surrogate recoveries exceeding the 130 % QC criteria, possibly due to the matrix interference.

The results of samples 13741 (G9), 13742 (F8), 13748 (G8), 13846 (G3), 13847 (H4), and 13853 (H3) were not reported. Those samples were terminated prematurely due to detector saturation caused by high levels of hydrocarbons, except sample 13748 which was lost in desorption due to Telar bag bursting and sample 13853 (H3) which was used for test run. It is assumed that the result of those samples are similar to that of the remaining samples which were reported.

Replicate results are relatively consistent on tubes, Tedlar bags, and Summa canister analyses, except a pair of samples 3304-13754 and 3304-13755 which showed different level of compounds found in the samples.

The recoveries of BS/BSD ranged from 66 to 83% and RPDs were from 0 to 4 %. Summa canister MS/MSD recoveries on sample SG04322 were from 67 to 113 % and RPDs ranged from 0 to 5%.

As requested, non-target compounds were not reported. Preliminary review showed that most samples' largest peaks were at C9 to C12 alkane, alkenes, and alkyl benzenes.

³Entech 7000 Preconcentrator operation manual ver 1.2: Section 5 operation/5.5.2.6 sample volume

TABLE 1 - Instrument Conditions for Summa Canisters and Tenax/CMS Tubes

A. Automatic Desorber (Entech 5100TD) Conditions

Cool Desorb Temperature	: 20°C
Cool Desorb Time	: 1 minute
Cool Desorb Flow	: 40 mL/min
Hot Desorb Temperature	: 260°C
Hot Desorb Time	: 6.5 minute
Hot Desorb Flow	: 40 mL/min

B. Preconcentrator (Entech 7000) Conditions:

M-1 Cryotrap Temperature	: -160°C
Internal Standard Trap Time	: 1.0 minute
Sample Flow	: 150 mL/min
M-1 Cryotrap Desorb Temperature	: 20°C
M-2 Cryotrap Temperature	: -10°C
Transfer (M-1 to M-2) Time	: 4.5 minutes
M-2 Cryotrap Desorb Temperature	: 240°C
M-3 Cryotrap Temperature	: -160°C
Transfer (M-2 to M-3) Time	: 3.5 minutes
Injection Time	: 2.0 minutes

C. GC/MS Conditions, Sample Analysis:

Initial Temperature	: 40.0°C
Initial Time	: 6.0 minutes
Ramp Rate	: 8.0°C/min
Final Temperature	: 185.0°C
Final Time	: 11.4 minutes
Run Time	: 35.5 minutes
Mass Scan Range:	: 35 to 250 AMU

Column: 0.32 mm x 60 meter Restek RTx-5, 1.50 um film thickness (Restek Corporation)

TABLE 2 - Concentrations, Retention Times and Quantitation Ions for Air Toxic Standards

<u>Compound</u>	<u>Cylinder</u>	<u>Conc. (ppmv)</u>	<u>RT (min)</u>	<u>Quant. Ion</u>
chloromethane	ALM009519	0.98	6.49	50
vinyl chloride	ALM009519	0.97	6.85	62
chloroethane	ALM009519	1.00	7.94	64
trichlorofluoromethane	ALM009519	1.04	8.90	101
1,1-dichloroethene	ALM009519	1.02	9.95	61
dichloromethane	ALM009519	1.00	10.41	49
trans-1,2-dichloroethene	ALM009519	1.00	11.42	61
1,1-dichloroethane	ALM009519	1.02	11.92	63
trichloromethane	ALM009519	1.02	13.33	83
1,1,1-trichloroethane	ALM009519	1.01	14.41	97
1,2-dichloroethane	ALM009519	1.02	14.49	62
benzene	ALM009519	1.00	15.01	78
carbon tetrachloride	ALM009519	0.98	15.04	117
trichloroethene	ALM009519	1.00	16.24	130
dibromomethane	ALM009519	0.98	16.36	174
bromodichloromethane	ALM009519	1.01	16.48	83
toluene	ALM009519	1.01	18.49	91
1,1,2-trichloroethene	ALM009519	0.98	18.53	97
tetrachloroethene	ALM009519	1.00	19.86	166
ethylbenzene	ALM009519	1.01	21.25	91
meta-xylene	ALM009519	1.02	21.45	91
styrene	ALM009519	1.04	22.07	104
ortho-xylene	ALM009519	1.04	22.17	91
1,1,2,2-tetrachloroethane	ALM009519	1.00	22.56	83
1,3,5-trimethylbenzene	ALM009519	1.05	23.97	120

Surrogate Standards

bromochloromethane	ALM046281	1.06	13.36	49
p-bromofluorobenzene	ALM046281	1.06	23.01	95

Appendix G

Appendix G

APPENDIX G
FINAL ANALYTICAL REPORT
SUMMA CANISTER SAMPLES
WASTE DISPOSAL, INC. SITE
SANTA FE SPRINGS, CALIFORNIA
MAY 1999

LM\FR\00085

Table 3 - Air Toxic Target Compound Results for Tenax/CMS Samples
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 1 of 5

Sample Number	Method Blank	13745 Trip Blank	13747 Trip Blank	Method Blank	13756 17
Sample Location	N/A	08/18/98	08/18/98	N/A	08/15/98
Date Sampled	08/19/98	08/19/98	08/19/98	08/21/98	08/21/98
Date Analyzed	WDI002	WDI003	WDI004	WDI016	WDI017
Chloromethane	1 U	0.8 J	1 U	2 U	1 U
Vinyl Chloride	1 U	1 U	1 U	2 U	39 E
Chloroethane	1 U	1 U	1 U	2 U	3 D
Trichlorofluoromethane	1 U	3	4	2 U	57 E
1,1-Dichloroethene	1 U	1 U	1 U	2 U	0.4 J
Methylene Chloride	1 U	1 U	0.1 J	2 U	2
trans-1,2-Dichloroethylene	1 U	1 U	1 U	2 U	1 U
1,1-Dichloroethane	1 U	1 U	1 U	2 U	1 U
Trichloromethane	1 U	1 U	1 U	2 U	1 U
1,1,1-Trichloroethane	1 U	1 U	1 U	2 U	0.2 J
1,2-Dichloroethane	1 U	1 U	1 U	2 U	1 J
Benzene	0.2 J	0.9 J	0.6 J	0.2 J	27 E
Carbon Tetrachloride	1 U	1 U	1 U	2 U	1 U
Trichloroethylene	1 U	1 U	1 U	2 U	1 J
Dibromomethane	1 U	1 U	1 U	2 U	0.2 J
Bromodichloromethane	1 U	1 U	1 U	2 U	0.1 J
Toluene	1 U	0.3 J	0.2 J	0.2 J	26 E
1,1,2-Trichloroethane	1 U	1 U	1 U	2 U	1 U
Tetrachloroethylene	1 U	1 U	1 U	2 U	1 J
Ethylbenzene	1 U	1 U	1 U	2 U	6
m & p-Xylenes	1 U	1 U	1 U	2 U	20
Styrene	1 U	0.2 J	0.2 J	2 U	2
o-Xylene	1 U	1 U	1 U	2 U	11
1,1,2,2-Tetrachloroethane	1 U	1 U	1 U	2 U	1 U
1,3,5-Trimethylbenzene	1 U	1 U	1 U	0.3 J	9
p-Bromofluorobenzene (% Rec)	109	111	113	100	117
Sample Volume (mL)	1000	1000	1000	500	1000
Quantitation Limit (ppbv)	1	1	1	2	1

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

Table 3 - Air Toxic Target Compound Results for Tenax/CMS Samples
Waste Disposal Inc. Site, Santa Fe Spring, CA WA # 3-304
(concentrations in ppbv)

Page 2 of 5

Sample Number	Method	13841	13842	13843	13844
Sample Location	Blank	C9	C9	D9	D5
Date Sampled	N/A	08/21/98	08/21/98	08/21/98	08/21/98
Date Analyzed	08/31/98	08/31/98	08/31/98	08/31/98	08/31/98
Data File	WDI079	WDI080	WDI081	WDI082	WDI083
Chloromethane	2	11 J	7 J	20 U	20 U
Vinyl Chloride	2 U	75	87	1100 E	110
Chloroethane	2 U	19 U	19 U	20 U	20 U
Trichlorofluoromethane	2 U	1500 E	1900 E	2100 E	1700 E
1,1-Dichloroethene	2 U	19 U	19 U	20 U	24
Methylene Chloride	2 U	8 J	6 J	20 U	20 U
trans-1,2-Dichloroethylene	2 U	19 U	19 U	20 U	20 U
1,1-Dichloroethane	2 U	6 J	19 U	20 U	20 U
Trichloromethane	2 U	19 U	19 U	20 U	20 U
1,1,1-Trichloroethane	2 U	12 J	9 J	8 J	29
1,2-Dichloroethane	2 U	19 U	19 U	20 U	20 U
Benzene	2	360	290	20 U	340
Carbon Tetrachloride	2 U	19 U	19 U	20 U	20 U
Trichloroethylene	2 U	11 J	7 J	20 U	43
Dibromomethane	2 U	19 U	19 U	20 U	20 U
Bromodichloromethane	2 U	19 U	19 U	20 U	20 U
Toluene	0.3 J	71	43	160	66
1,1,2-Trichloroethane	2 U	19 U	19 U	20 U	20 U
Tetrachloroethylene	2 U	2 J	19 U	20 U	4 J
Ethylbenzene	2 U	110	45	140	21
m & p-Xylenes	2 U	110	48	16 J	37
Styrene	2 U	12 J	13 J	19 J	21
o-Xylene	2 U	17 J	8 J	20 U	18 J
1,1,2,2-Tetrachloroethane	2 U	19 U	19 U	20 U	20 U
1,3,5-Trimethylbenzene	2 U	19 U	19 U	20 U	8 J
p-Bromofluorobenzene (% Rec)	108	115	111	124	117
Sample Volume (mL)	500	52	52	50	50
Quantitation Limit (ppbv)	2	19	19	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

Table 3 - Air Toxic Target Compound Results for Tenax/CMS Samples
Waste Disposal Inc. Site, Santa Fe Spring, CA WA # 3-304
(concentrations in ppbv)

Page 3 of 5

Sample Number	13845	Method	13827	13828	13750
Sample Location	D4	Blank	F7	D3	G9
Date Sampled	08/21/98	N/A	08/20/98	08/21/98	08/20/98
Date Analyzed	08/31/98	09/01/98	09/01/98	09/01/98	09/01/98
Data File	WDI084	WDI088	WDI089	WDI090	WDI091
Chloromethane	14 J	2 U	6 J	16 J	12
Vinyl Chloride	6 J	2 U	11	20 U	240
Chloroethane	20 U	2 U	10 U	20 U	10 U
Trichlorofluoromethane	2200 E	2 U	590 E	2600 E	1300 E
1,1-Dichloroethene	20 U	2 U	10 U	20 U	10 U
Methylene Chloride	42	2 U	7 J	9 J	2 J
trans-1,2-Dichloroethylene	20 U	2 U	10 U	20 U	10 U
1,1-Dichloroethane	20 U	2 U	10 U	20 U	10 U
Trichloromethane	20 U	2 U	10 U	20 U	10 U
1,1,1-Trichloroethane	11 J	2 U	19	20 U	5 J
1,2-Dichloroethane	20 U	2 U	10 U	20 U	10 U
Benzene	61	0.4 J	96	50	10 U
Carbon Tetrachloride	20 U	2 U	10 U	20 U	10 U
Trichloroethylene	7 J	2 U	19	3 J	8 J
Dibromomethane	20 U	2 U	10 U	20 U	10 U
Bromodichloromethane	20 U	2 U	10 U	20 U	10 U
Toluene	20 J	0.3 J	73	36	110
1,1,2-Trichloroethane	20 U	2 U	10 U	20 U	10 U
Tetrachloroethylene	20 U	2 U	2 J	5 J	4 J
Ethylbenzene	3 J	2 U	30	12 J	19
m & p-Xylenes	8 J	0.2 J	71	26	41
Styrene	6 J	2 U	11	18 J	11
o-Xylene	3 J	0.2 J	20	15 J	17
1,1,2,2-Tetrachloroethane	20 U	2 U	10 U	20 U	10 U
1,3,5-Trimethylbenzene	20 U	2 U	8 J	12 J	19
p-Bromofluorobenzene (% Rec)	109	115	112	122	140
Sample Volume (mL)	50	500	100	50	100
Quantitation Limit (ppbv)	20	2	10	20	10

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

Table 3 - Air Toxic Target Compound Results for Tenax/CMS Samples
Waste Disposal Inc. Site, Santa Fe Spring, CA WA # 3-304
(concentrations in ppbv)

Page 4 of 5

Sample Number	13754	13755	13856	*13741	*13742
Sample Location	G9	G9	TB	G9	F8
Date Sampled	08/20/98	08/20/98	08/21/98	08/15/98	08/15/98
Date Analyzed	09/01/98	09/01/98	09/01/98	08/19/98	08/20/98
Data File	WDI092	WDI093	WDI094	WDI006	WDI009
Chloromethane	10 U	5 J	10 J	- U	- U
Vinyl Chloride	10 U	30	20 U	- U	- U
Chloroethane	10 U	10 U	20 U	- U	- U
Trichlorofluoromethane	500 E	1400 E	850 E	- U	- U
1,1-Dichloroethylene	10 U	10 U	20 U	- U	- U
Methylene Chloride	2 J	6 J	3 J	- U	- U
trans-1,2-Dichloroethylene	10 U	10 U	20 U	- U	- U
1,1-Dichloroethane	10 U	10 U	20 U	- U	- U
Trichloromethane	10 U	10 U	20 U	- U	- U
1,1,1-Trichloroethane	3 J	9 J	20 U	- U	- U
1,2-Dichloroethane	10 U	10 U	20 U	- U	- U
Benzene	14	47	20 J	- U	- U
Carbon Tetrachloride	10 U	10 U	20 U	- U	- U
Trichloroethylene	3 J	11	20 U	- U	- U
Dibromomethane	10 U	10 U	20 U	- U	- U
Bromodichloromethane	10 U	10 U	20 U	- U	- U
Toluene	12	55	8 J	- U	- U
1,1,2-Trichloroethane	10 U	10 U	20 U	- U	- U
Tetrachloroethylene	5 J	2 J	20 U	- U	- U
Ethylbenzene	2 J	9 J	20 U	- U	- U
m & p-Xylenes	5 J	21	3 J	- U	- U
Styrene	6 J	7 J	7 J	- U	- U
o-Xylene	2 J	10 U	20 U	- U	- U
1,1,2,2-Tetrachloroethane	10 U	10 U	20 U	- U	- U
1,3,5-Trimethylbenzene	10 U	10 U	20 U	- U	- U
p-Bromofluorobenzene (% Rec)	109	126	117	-	-
Sample Volume (mL)	100	100	50	-	-
Quantitation Limit (ppbv)	10	10	20	-	-

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - Results were not obtained because instrument was terminated prematurely due to detector saturation

Table 3 - Air Toxic Target Compound Results for Tenax/CMS Samples
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 5 of 5

Sample Number	**13748	*13846	*13847	***13853
Sample Location	G8	G3	H4	H3
Date Sampled	08/15/98	08/21/98	08/21/98	08/16/98
Date Analyzed	08/23/98	08/31/98	08/31/98	08/20/98
Data File	WDI006-1	WDI085	WDI086	WDI012
Chloromethane	- U	- U	- U	- U
Vinyl Chloride	- U	- U	- U	- U
Chloroethane	- U	- U	- U	- U
Trichlorofluoromethane	- U	- U	- U	- U
1,1-Dichloroethene	- U	- U	- U	- U
Methylene Chloride	- U	- U	- U	- U
trans-1,2-Dichloroethylene	- U	- U	- U	- U
1,1-Dichloroethane	- U	- U	- U	- U
Trichloromethane	- U	- U	- U	- U
1,1,1-Trichloroethane	- U	- U	- U	- U
1,2-Dichloroethane	- U	- U	- U	- U
Benzene	- U	- U	- U	- U
Carbon Tetrachloride	- U	- U	- U	- U
Trichloroethylene	- U	- U	- U	- U
Dibromomethane	- U	- U	- U	- U
Bromodichloromethane	- U	- U	- U	- U
Toluene	- U	- U	- U	- U
1,1,2-Trichloroethane	- U	- U	- U	- U
Tetrachloroethylene	- U	- U	- U	- U
Ethylbenzene	- U	- U	- U	- U
m & p-Xylenes	- U	- U	- U	- U
Styrene	- U	- U	- U	- U
o-Xylene	- U	- U	- U	- U
1,1,2,2-Tetrachloroethane	- U	- U	- U	- U
1,3,5-Trimethylbenzene	- U	- U	- U	- U
p-Bromofluorobenzene (% Rec)	-	-	-	-
Sample Volume (mL)	-	-	-	-
Quantitation Limit (ppbv)	-	-	-	-

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - Results were not obtained because instrument was terminated prematurely due to detector saturation

** - Results were not obtained because the sample was lost in desorption process

*** - Results were not obtained because the sample was used for test run

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 1 of 16

Sample Number	Method Blank Tedlar Bag	13757 TB-Back	13743 TB-G7	13744 TB-F9	13746 TB-G9
Sample Location	Ground				
Date Sampled	N/A	08/16/98	08/15/98	08/15/98	08/15/98
Date Analyzed	08/23/98	08/23/98	08/23/98	08/23/98	08/23/98
Data File	WDI001	WDI002	WDI003	WDI004	WDI005
Chloromethane	4 U	20 U	20 U	20 U	20 U
Vinyl Chloride	4 U	20 U	19 J	1100 E	20 U
Chloroethane	4 U	20 U	20 U	20 U	20 U
Trichlorofluoromethane	4 U	9 J	6 J	9 J	3 J
1,1-Dichloroethene	4 U	20 U	20 U	20 U	20 U
Methylene Chloride	4 U	20 U	20 U	20 U	20 U
trans-1,2-Dichloroethylene	4 U	20 U	20 U	20 U	20 U
1,1-Dichloroethane	4 U	20 U	20 U	20 U	20 U
Trichloromethane	4 U	20 U	20 U	20 U	20 U
1,1,1-Trichloroethane	4 U	20 U	20 U	20 U	20 U
1,2-Dichloroethane	4 U	20 U	20 U	20 U	20 U
Benzene	4 U	20 U	790 E	130	11 J
Carbon Tetrachloride	4 U	20 U	20 U	20 U	20 U
Trichloroethylene	4 U	20 U	200	20 U	20 U
Dibromomethane	4 U	20 U	20 U	20 U	20 U
Bromodichloromethane	4 U	20 U	20 U	20 U	20 U
Toluene	4 U	20 U	2000 E	2000 E	44
1,1,2-Trichloroethane	4 U	20 U	20 U	20 U	20 U
Tetrachloroethylene	4 U	20 U	110	20 U	20 U
Ethylbenzene	4 U	20 U	650 E	1500 E	4 J
m & p-Xylenes	4 U	20 U	1600 E	3200 E	17 J
Styrene	4 U	20 U	7 J	20 U	20 U
o-Xylene	4 U	20 U	670 E	1700 E	5 J
1,1,2,2-Tetrachloroethane	4 U	20 U	20 U	20 U	20 U
1,3,5-Trimethylbenzene	4 U	20 U	180	380	20 U
p-Bromofluorobenzene (% Rec)	118	111	130	156	105
Sample Volume (mL)	250	50	50	50	50
Quantitation Limit (ppbv)	4	20	20	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
 (concentrations in ppbv)

Page 2 of 16

Sample Number	13760	13761	13762	13763	13764
Sample Location	TB-D9	TB-E9	TB-E8	TB-E7	TB-D8
Date Sampled	08/15/98	08/15/98	08/15/98	08/15/98	08/15/98
Date Analyzed	08/23/98	08/23/98	08/23/98	08/23/98	08/23/98
Data File	WDI006	WDI007	WDI008	WDI009	WDI010
Chloromethane	20 U				
Vinyl Chloride	160	50	1200 E	630 E	470
Chloroethane	20 U				
Trichlorofluoromethane	14 J	18 J	5 J	20	18 J
1,1-Dichloroethene	20 U	20 U	13 J	20 U	20 U
Methylene Chloride	20 U				
trans-1,2-Dichloroethylene	20 U	20 U	34	20 U	12 J
1,1-Dichloroethane	20 U				
Trichloromethane	20 U				
1,1,1-Trichloroethane	20 U				
1,2-Dichloroethane	20 U				
Benzene	660 E	83	580 E	1100 E	74
Carbon Tetrachloride	20 U				
Trichloroethylene	20 U	20 U	1500 E	14 J	3 J
Dibromomethane	20 U				
Bromodichloromethane	20 U				
Toluene	24	100	950 E	2100 E	23
1,1,2-Trichloroethane	20 U				
Tetrachloroethylene	20 U	20 U	69	20 U	20 U
Ethylbenzene	140	41	180	1200 E	4 J
m & p-Xylenes	13 J	130	570 E	2100 E	10 J
Styrene	20 U	20 U	3 J	20 U	20 U
o-Xylene	11 J	45	200	620 E	3 J
1,1,2,2-Tetrachloroethane	20 U				
1,3,5-Trimethylbenzene	20 U	25	130	110	20 U
p-Bromofluorobenzene (% Rec)	145	114	118	129	111
Sample Volume (mL)	50	50	50	50	50
Quantitation Limit (ppbv)	20	20	20	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 3 of 16

Sample Number	13766	13766	Method Blank	13767	System Blank
Sample Location	TB-FB	TB-FB REP	Tedlar Bag	TB-F3	Tedlar Bag
Date Sampled	08/15/98	08/15/98	N/A	08/16/98	N/A
Date Analyzed	08/23/98	08/23/98	08/24/98	08/24/98	08/24/98
Data File	WDI011	WDI012	WDI014	WDI015	WDI020
Chloromethane	20 U	20 U	4 U	20 U	4 U
Vinyl Chloride	20 U	20 U	4 U	1100 E	4 U
Chloroethane	20 U	20 U	4 U	20 U	4 U
Trichlorofluoromethane	19 J	20 J	4 U	14 J	4 U
1,1-Dichloroethene	20 U	20 U	4 U	7 J	4 U
Methylene Chloride	20 U	20 U	4 U	20 U	4 U
trans-1,2-Dichloroethylene	20 U	20 U	4 U	27	4 U
1,1-Dichloroethane	20 U	20 U	4 U	20 U	4 U
Trichloromethane	20 U	20 U	4 U	20 U	4 U
1,1,1-Trichloroethane	20 U	20 U	4 U	20 U	4 U
1,2-Dichloroethane	20 U	20 U	4 U	20 U	4 U
Benzene	20 U	20 U	4 U	130	4 U
Carbon Tetrachloride	20 U	20 U	4 U	20 U	4 U
Trichloroethylene	20 U	20 U	4 U	130	4 U
Dibromomethane	20 U	20 U	4 U	20 U	4 U
Bromodichloromethane	20 U	20 U	4 U	20 U	4 U
Toluene	20 U	20 U	0.5 J	35	4 U
1,1,2-Trichloroethane	20 U	20 U	4 U	20 U	4 U
Tetrachloroethylene	20 U	20 U	4 U	100	4 U
Ethybenzene	20 U	20 U	4 U	11 J	4 U
m & p-Xylenes	20 U	20 U	0.4 J	15 J	4 U
Styrene	20 U	20 U	4 U	20 U	4 U
o-Xylene	20 U	20 U	4 U	6 J	4 U
1,1,2,2-Tetrachloroethane	20 U	20 U	4 U	4 J	4 U
1,3,5-Trimethylbenzene	20 U	20 U	4 U	20 U	4 U
p-Bromofluorobenzene (% Rec)	113	114	124	125	112
Sample Volume (mL)	50	50	250	50	250
Quantitation Limit (ppbv)	20	20	4	20	4

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 4 of 16

Sample Number	13771	13772	13773	Method Blank	13744
Sample Location	TB-E1	TB-E2	TB-E3	Tedlar Bag	TB-F9
Date Sampled	08/16/98	08/16/98	08/16/98	N/A	08/15/98
Date Analyzed	08/24/98	08/24/98	08/24/98	08/24/98	08/24/98
Data File	WDI021	WDI022	WDI023	WDI026	WDI027
Chloromethane	20 U	20 U	20 U	4 U	200 U
Vinyl Chloride	44	210	19 J	4 U	160 J
Chloroethane	20 U	20 U	20 U	4 U	200 U
Trichlorofluoromethane	20 U	2 J	200	4 U	200 U
1,1-Dichloroethene	20 U	2 J	20 U	4 U	200 U
Methylene Chloride	20 U	20 U	20 U	4 U	200 U
trans-1,2-Dichloroethylene	20 U	20 U	20 U	4 U	200 U
1,1-Dichloroethane	20 U	20 U	20 U	4 U	200 U
Trichloromethane	20 U	20 U	20 U	4 U	200 U
1,1,1-Trichloroethane	20 U	20 U	20 U	4 U	200 U
1,2-Dichloroethane	20 U	20 U	20 U	4 U	200 U
Benzene	69	1100 E	17 J	4 U	1900
Carbon Tetrachloride	20 U	20 U	20 U	4 U	200 U
Trichloroethylene	6 J	140	20 U	4 U	200 U
Dibromomethane	20 U	20 U	20 U	4 U	200 U
Bromodichloromethane	20 U	20 U	20 U	4 U	200 U
Toluene	35	3300 E	56	0.6 J	2300
1,1,2-Trichloroethane	20 U	20 U	20 U	4 U	200 U
Tetrachloroethylene	6 J	730 E	10 J	4 U	200 U
Ethylbenzene	14 J	1400 E	15 J	4 U	150 J
m & p-Xylenes	15 J	3400 E	69	0.4 J	650
Styrene	20 U	20 U	20 U	4 U	200 U
o-Xylene	12 J	1700 E	22	4 U	160 J
1,1,2,2-Tetrachloroethane	20 U	20 U	20 U	4 U	200 U
1,3,5-Trimethylbenzene	20 U	320	9 J	4 U	24 J
p-Bromofluorobenzene (% Rec)	132	184	111	108	104
Sample Volume (mL)	50	50	50	250	5.0
Quantitation Limit (ppbv)	20	20	20	4	200

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 5 of 16

Sample Number	13775	13776	13777	13778	13779
Sample Location	TB-G1	TB-H7	TB-H8	TB-I5	TB-I6
Date Sampled	08/16/98	08/15/98	08/15/98	08/15/98	08/17/98
Date Analyzed	08/24/98	08/24/98	08/24/98	08/24/98	08/24/98
Data File	WDI028	WDI029	WDI030	WDI031	WDI032
Chloromethane	20 U				
Vinyl Chloride	8900 E	160	45	250	420
Chloroethane	20 U				
Trichlorofluoromethane	20 U	12 J	16 J	9 J	18 J
1,1-Dichloroethene	110	20 U	20 U	7 J	20 U
Methylene Chloride	20 U				
trans-1,2-Dichloroethylene	510 E	20 U	20 U	20 U	20 U
1,1-Dichloroethane	20 U				
Trichloromethane	20 U				
1,1,1-Trichloroethane	20 U				
1,2-Dichloroethane	20 U				
Benzene	2500 E	350	2 J	1600 E	150
Carbon Tetrachloride	20 U				
Trichloroethylene	3900 E	14 J	20 U	190	8 J
Dibromomethane	20 U				
Bromodichloromethane	20 U				
Toluene	4000 E	230	6 J	3300 E	130
1,1,2-Trichloroethane	20 U				
Tetrachloroethylene	3000 E	11 J	20 U	35	20 U
Ethylbenzene	680 E	44	20 U	520 E	380
m & p-Xylenes	1800 E	43	3 J	1500 E	550 E
Styrene	20 U	20 U	20 U	6 J	20 U
o-Xylene	570 E	22	20 U	440	330
1,1,2,2-Tetrachloroethane	6 J	20 U	20 U	20 U	20 U
1,3,5-Trimethylbenzene	58	20 U	20 U	47	140
p-Bromofluorobenzene (% Rec)	125	121	106	122	141
Sample Volume (mL)	50	50	50	50	50
Quantitation Limit (ppbv)	20	20	20	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 6 of 16

Sample Number	13770	Method Blank	13810	13811	13812
Sample Location	TB-F1	Tedlar Bag	TB-A5	TB-B5	TB-B7
Date Sampled	08/16/98	N/A	08/15/98	08/15/98	08/15/98
Date Analyzed	08/24/98	08/25/98	08/25/98	08/25/98	08/25/98
Data File	WDI033	WDI034	WDI035	WDI036	WDI037
Chloromethane	100 U	4 U	20 U	20 U	20 U
Vinyl Chloride	140	4 U	26	2200 E	730 E
Chloroethane	100 U	4 U	20 U	20 U	20 U
Trichlorofluoromethane	100 U	4 U	17 J	25	16 J
1,1-Dichloroethene	100 U	4 U	20 U	7 J	20 U
Methylene Chloride	100 U	4 U	20 U	20 U	20 U
trans-1,2-Dichloroethylene	100 U	4 U	20 U	20 U	20 U
1,1-Dichloroethane	100 U	4 U	20 U	20 U	20 U
Trichloromethane	100 U	4 U	20 U	20 U	20 U
1,1,1-Trichloroethane	100 U	4 U	20 U	20 U	20 U
1,2-Dichloroethane	100 U	4 U	20 U	20 U	20 U
Benzene	670	4 U	6 J	620 E	63
Carbon Tetrachloride	100 U	4 U	20 U	20 U	20 U
Trichloroethylene	58 J	4 U	20 U	200	13 J
Dibromomethane	100 U	4 U	20 U	20 U	20 U
Bromodichloromethane	100 U	4 U	20 U	20 U	20 U
Toluene	210	4 U	14 J	1100 E	28
1,1,2-Trichloroethane	100 U	4 U	20 U	20 U	20 U
Tetrachloroethylene	37 J	4 U	20 U	130	6 J
Ethylbenzene	100 U	4 U	20 U	120	2 J
m & p-Xylenes	20 J	4 U	3 J	290	4 J
Styrene	100 U	4 U	20 U	20 U	20 U
o-Xylene	100 U	4 U	20 U	88	2 J
1,1,2,2-Tetrachloroethane	100 U	0.4 J	20 U	20 U	20 U
1,3,5-Trimethylbenzene	100 U	4 U	20 U	23	20 U
p-Bromofluorobenzene (% Rec)	106	108	102	131	118
Sample Volume (mL)	10	250	50	50	50
Quantitation Limit (ppbv)	100	4	20	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

**Table 4^a - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304**
(concentrations in ppbv)

Page 7 of 16

Sample Number	13813	13814	System Blank	13816	13818
Sample Location	TB-B8	TB-C5	Tedlar Bag	TB-G9	TB-A4
Date Sampled	08/15/98	08/15/98	N/A	08/17/98	08/17/98
Date Analyzed	08/25/98	08/25/98	08/25/98	08/25/98	08/25/98
Data File	WDI038	WDI039	WDI041	WDI042	WDI043
Chloromethane	20 U	11 J	4 U	400 U	400 U
Vinyl Chloride	150	1300 E	4 U	400 U	400 U
Chloroethane	20 U	18 U	4 U	400 U	400 U
Trichlorofluoromethane	12 J	5 J	4 U	68 J	400 U
1,1-Dichloroethene	20 U	2 J	4 U	400 U	400 U
Methylene Chloride	2 J	3 J	4 U	400 U	400 U
trans-1,2-Dichloroethylene	20 U	17 J	4 U	400 U	400 U
1,1-Dichloroethane	20 U	18 U	4 U	400 U	400 U
Trichloromethane	20 U	18 U	4 U	400 U	400 U
1,1,1-Trichloroethane	20 U	18 U	4 U	400 U	400 U
1,2-Dichloroethane	20 U	18 U	4 U	400 U	400 U
Benzene	20 U	18 J	4 U	400 U	400 U
Carbon Tetrachloride	20 U	18 U	4 U	400 U	400 U
Trichloroethylene	20 U	15 J	4 U	400 U	400 U
Dibromomethane	20 U	18 U	4 U	400 U	400 U
Bromodichloromethane	20 U	18 U	4 U	400 U	400 U
Toluene	7 J	15 J	1 J	48 J	84 J
1,1,2-Trichloroethane	20 U	18 U	4 U	400 U	400 U
Tetrachloroethylene	20 U	19	4 U	64 J	400 U
Ethylbenzene	20 U	18 U	4 U	400 U	120 J
m & p-Xylenes	3 J	3 J	1 J	400 U	550
Styrene	20 U	18 U	4 U	400 U	400 U
o-Xylene	20 U	18 U	4 U	400 U	230 J
1,1,2,2-Tetrachloroethane	20 U	18 U	4 U	400 U	400 U
1,3,5-Trimethylbenzene	20 U	18 U	4 U	400 U	370 J
p-Bromofluorobenzene (% Rec)	114	123	131	116	122
Sample Volume (mL)	50	55	250	2.5	2.5
Quantitation Limit (ppbv)	20	18	4	400	400

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 8 of 16

Sample Number	13820	Method Blank	13821	13822	13823
Sample Location	TB-D7	Tedlar Bag	TB-D6	TB-D5	TB-C8
Date Sampled	08/17/98	N/A	08/15/98	08/15/98	08/15/98
Date Analyzed	08/25/98	08/27/98	08/27/98	08/27/98	08/27/98
Data File	WDI044	WDI047	WDI048	WDI049	WDI050
Chloromethane	360 U	4 U	20 U	20 U	20 U
Vinyl Chloride	13000 E	4 U	22	46	20 U
Chloroethane	360 U	4 U	20 U	20 U	20 U
Trichlorofluoromethane	310 J	4 U	28	22	44
1,1-Dichloroethene	360 U	4 U	20 U	20 U	20 U
Methylene Chloride	360 U	4 U	20 U	20 U	20 U
trans-1,2-Dichloroethylene	360 U	4 U	20 U	20 U	20 U
1,1-Dichloroethane	360 U	4 U	20 U	20 U	20 U
Trichloromethane	360 U	4 U	20 U	20 U	20 U
1,1,1-Trichloroethane	360 U	4 U	20 U	20 U	20 U
1,2-Dichloroethane	360 U	4 U	20 U	20 U	20 U
Benzene	320 J	4 U	45	94	3 J
Carbon Tetrachloride	360 U	4 U	20 U	20 U	20 U
Trichloroethylene	170 J	4 U	17 J	20 U	20 U
Dibromomethane	360 U	4 U	20 U	20 U	20 U
Bromodichloromethane	360 U	4 U	20 U	20 U	20 U
Toluene	140 J	1 J	73	7 J	10 J
1,1,2-Trichloroethane	360 U	4 U	20 U	20 U	20 U
Tetrachloroethylene	36 J	4 U	23	20 U	20 U
Ethylbenzene	360 U	4 U	16 J	7 J	20 U
m & p-Xylenes	47 J	4 U	18 J	14 J	4 J
Styrene	360 U	4 U	20 U	20 U	2 J
o-Xylene	360 U	4 U	11 J	9 J	20 U
1,1,2,2-Tetrachloroethane	360 U	4 U	20 U	20 U	20 U
1,3,5-Trimethylbenzene	360 U	4 U	3 J	15 J	20 U
p-Bromofluorobenzene (% Rec)	115	109	147	107	100
Sample Volume (mL)	2.75	250	50	50	50
Quantitation Limit (ppbv)	360	4	20	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 9 of 16

Sample Number	13825	13850	System Blank	13854	13855
Sample Location	TB-C9	TB-G2	Tedlar Bag	TB-H3	TB-H3
Date Sampled	08/17/98	08/16/98	N/A	08/16/98	08/16/98
Date Analyzed	08/27/98	08/27/98	08/27/98	08/27/98	08/27/98
Data File	WDI051	WDI053	WDI054	WDI055	WDI057
Chloromethane	20 U	20 U	4 U	20 U	20 U
Vinyl Chloride	32	100	4 U	38	9 J
Chloroethane	20 U	20 U	4 U	20 U	20 U
Trichlorofluoromethane	10 J	3 J	4 U	17 J	15 J
1,1-Dichloroethene	20 U	6 J	4 U	20 U	20 U
Methylene Chloride	20 U	20 U	4 U	20 U	20 U
trans-1,2-Dichloroethylene	20 U	32	4 U	20 U	20 U
1,1-Dichloroethane	20 U	20 U	4 U	20 U	20 U
Trichloromethane	20 U	20 U	4 U	20 U	20 U
1,1,1-Trichloroethane	20 U	20 U	4 U	20 U	20 U
1,2-Dichloroethane	20 U	20 U	4 U	20 U	20 U
Benzene	220	1800 E	1 J	21	5 J
Carbon Tetrachloride	20 U	20 U	4 U	20 U	20 U
Trichloroethylene	20 U	1500 E	4 U	7 J	20 U
Dibromomethane	20 U	20 U	4 U	20 U	20 U
Bromodichloromethane	20 U	20 U	4 U	20 U	20 U
Toluene	68	3200 E	2 J	28	13 J
1,1,2-Trichloroethane	20 U	20 U	4 U	20 U	20 U
Tetrachloroethylene	20 U	1200 E	4 U	9 J	20 U
Ethylbenzene	390	510 E	4 U	3 J	20 U
m & p-Xylenes	360	1800 E	1 J	15 J	5 J
Styrene	3 J	6 J	4 U	20 U	20 U
o-Xylene	53	510 E	0.4 J	4 J	20 U
1,1,2,2-Tetrachloroethane	20 U	20 U	4 U	20 U	20 U
1,3,5-Trimethylbenzene	20 U	85	4 U	20 U	20 U
p-Bromofluorobenzene (% Rec)	106	95	103	101	100
Sample Volume (mL)	50	50	250	50	50
Quantitation Limit (ppbv)	20	20	4	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 10 of 16

Sample Number	13852	Method Blank	13858	13859	13861
Sample Location	TB-H2	Tedlar Bag	TB-H5	TB-H6	TB-B4
Date Sampled	08/16/98	N/A	08/15/98	08/15/98	08/16/98
Date Analyzed	08/27/98	08/28/98	08/28/98	08/28/98	08/28/98
Data File	WDI056	WDI058	WDI059	WDI060	WDI063
Chloromethane	600 C	4 U	20 U	20 U	2 J
Vinyl Chloride	66 J	4 U	1800 E	20 U	2 J
Chloroethane	200 U	4 U	20 U	20 U	18 U
Trichlorofluoromethane	200 U	4 U	17 J	11 J	19
1,1-Dichloroethylene	200 U	4 U	20 U	20 U	18 U
Methylene Chloride	200 U	4 U	20 U	20 U	18 U
trans-1,2-Dichloroethylene	200 U	4 U	20 U	20 U	18 U
1,1-Dichloroethane	200 U	4 U	20 U	20 U	18 U
Trichloromethane	200 U	4 U	20 U	20 U	18 U
1,1,1-Trichloroethane	200 U	4 U	20 U	20 U	18 U
1,2-Dichloroethane	200 U	4 U	20 U	20 U	18 U
Benzene	16000 E	4 U	23	11 J	18 U
Carbon Tetrachloride	200 U	4 U	20 U	20 U	18 U
Trichloroethylene	200 U	4 U	3 J	4 J	18 U
Dibromomethane	200 U	4 U	20 U	20 U	18 U
Bromodichloromethane	200 U	4 U	20 U	20 U	18 U
Toluene	20000 E	2 J	12 J	11 J	6 J
1,1,2-Trichloroethane	200 U	4 U	20 U	20 U	18 U
Tetrachloroethylene	200 U	4 U	20 U	3 J	18 U
Ethylbenzene	4700	4 U	20 U	20 U	18 U
m & p-Xylenes	14000 E	1 J	20 U	4 J	3 J
Styrene	44 J	4 U	20 U	20 U	18 U
o-Xylene	5100 E	0.4 J	20 U	20 U	18 U
1,1,2,2-Tetrachloroethane	200 U	4 U	20 U	20 U	18 U
1,3,5-Trimethylbenzene	1900	4 U	20 U	20 U	18 U
p-Bromofluorobenzene (% Rec)	110	119	117	117	110
Sample Volume (mL)	5	250	50	50	55
Quantitation Limit (ppbv)	200	4	20	20	18

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 11 of 16

Sample Number	13860	13862	13865	13866	13869
Sample Location	TB-A4	TB-C3	TB-D3	TB-D3	TB-F3
Date Sampled	08/16/98	08/16/98	08/16/98	08/16/98	08/16/98
Date Analyzed	08/28/98	08/28/98	08/28/98	08/28/98	08/28/98
Data File	WDI064	WDI066	WDI069	WDI070	WDI071
Chloromethane	200 U	3	20 U	20 U	20 U
Vinyl Chloride	200 U	2 U	20 U	20 U	6500 E
Chloroethane	200 U	2 U	20 U	20 U	20 U
Trichlorofluoromethane	38 J	11	16 J	18 J	10 J
1,1-Dichloroethene	200 U	2 U	20 U	20 U	72
Methylene Chloride	200 U	0.3 J	2 J	20 U	20 U
trans-1,2-Dichloroethylene	200 U	2 U	20 U	20 U	250
1,1-Dichloroethane	200 U	2 U	20 U	20 U	20 U
Trichloromethane	200 U	2 U	20 U	20 U	20 U
1,1,1-Trichloroethane	200 U	2 U	20 U	20 U	20 U
1,2-Dichloroethane	200 U	2 U	20 U	20 U	20 U
Benzene	200 U	1 J	3 J	20 U	1900 E
Carbon Tetrachloride	200 U	2 U	20 U	20 U	20 U
Trichloroethylene	200 U	0.7 J	20 U	20 U	1300 E
Dibromomethane	200 U	2 U	20 U	20 U	20 U
Bromodichloromethane	200 U	2 U	20 U	20 U	20 U
Toluene	110 J	4	4 J	2 J	1400 E
1,1,2-Trichloroethane	200 U	2 U	20 U	20 U	20 U
Tetrachloroethylene	200 U	0.3 J	20 U	20 U	440
Ethylbenzene	290	0.4 J	20 U	20 U	310
m & p-Xylenes	1000	1 J	3 J	20 U	320
Styrene	200 U	0.6 J	20 U	20 U	20 U
o-Xylene	370	0.5 J	20 U	20 U	72
1,1,2,2-Tetrachloroethane	200 U	2 U	20 U	20 U	20 U
1,3,5-Trimethylbenzene	230	2 U	20 U	20 U	20 U
p-Bromofluorobenzene (% Rec)	117	119	117	111	118
Sample Volume (mL)	5	500	50	50	50
Quantitation Limit (ppbv)	200	2	20	20	20

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 12 of 16

Sample Number	Method Blank	13863	13864	13866
Sample Location	Tedlar Bag	TB-C4	TB-C4	TB-D3
Date Sampled	N/A	08/16/98	08/16/98	08/16/98
Date Analyzed	08/29/98	08/29/98	08/29/98	08/29/98
Data File	WDI074	WDI075	WDI076	WDI077
Chloromethane	4 U	7	1 J	4 U
Vinyl Chloride	4 U	10	4 U	7
Chloroethane	4 U	4 U	4 U	4 U
Trichlorofluoromethane	4 U	34	12	32
1,1-Dichloroethene	4 U	4 U	4 U	4 U
Methylene Chloride	4 U	0.6 J	0.5 J	4 U
trans-1,2-Dichloroethylene	4 U	4 U	4 U	4 U
1,1-Dichloroethane	4 U	4 U	4 U	4 U
Trichloromethane	4 U	4 U	4 U	4 U
1,1,1-Trichloroethane	4 U	4 U	4 U	4 U
1,2-Dichloroethane	4 U	4 U	4 U	4 U
Benzene	4 U	3 J	1 J	3 J
Carbon Tetrachloride	4 U	4 U	4 U	4 U
Trichloroethylene	4 U	2 J	1 J	0.6 J
Dibromomethane	4 U	4 U	4 U	4 U
Bromodichloromethane	4 U	4 U	4 U	4 U
Toluene	1 J	11	7	6
1,1,2-Trichloroethane	4 U	4 U	4 U	4 U
Tetrachloroethylene	4 U	1 J	0.7 J	4 U
Ethylbenzene	4 U	0.7 J	0.5 J	0.5 J
m & p-Xylenes	4 U	3 J	2 J	2 J
Styrene	4 U	0.6 J	0.6 J	0.4 J
o-Xylene	4 U	0.8 J	0.6 J	0.6 J
1,1,2,2-Tetrachloroethane	4 U	4 U	4 U	4 U
1,3,5-Trimethylbenzene	4 U	4 U	4 U	4 U
p-Bromofluorobenzene (% Rec)	115	119	117	121
Sample Volume (mL)	250	250	250	250
Quantitation Limit (ppbv)	4	4	4	4

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 13 of 16

Sample Number	Method Blank Tedlar Bag	13766 TB-F9	13769 TB-D6	Method Blank Tedlar Bag
Sample Location	N/A	08/19/98	08/19/98	N/A
Date Sampled	09/03/98	09/03/98	09/03/98	09/04/98
Date Analyzed				
Data File	WDI095	WDI096	WDI097	WDI099
Chloromethane	4 U	20 U	4 J	4 U
Vinyl Chloride	4 U	820 E	20 U	4 U
Chloroethane	4 U	20 U	20 U	4 U
Trichlorofluoromethane	4 U	20 U	10 J	4 U
1,1-Dichloroethene	4 U	20 U	20 U	4 U
Methylene Chloride	4 U	20 U	20 U	4 U
trans-1,2-Dichloroethylene	4 U	20 U	20 U	4 U
1,1-Dichloroethane	4 U	20 U	20 U	4 U
Trichloromethane	4 U	20 U	20 U	4 U
1,1,1-Trichloroethane	4 U	20 U	20 U	4 U
1,2-Dichloroethane	4 U	20 U	20 U	4 U
Benzene	4 U	58	8 J	4 U
Carbon Tetrachloride	4 U	20 U	20 U	4 U
Trichloroethylene	4 U	20 U	20 U	4 U
Dibromomethane	4 U	20 U	20 U	4 U
Bromodichloromethane	4 U	20 U	20 U	4 U
Toluene	1 J	1700 E	23	2 J
1,1,2-Trichloroethane	4 U	20 U	20 U	4 U
Tetrachloroethylene	4 U	20 U	20 U	4 U
Ethylbenzene	4 U	2200 E	5 J	0.4 J
m & p-Xylenes	0.6 J	3500 E	27	2 J
Styrene	0.5 J	20 U	20 U	4 U
o-Xylene	0.5 J	2500 E	9 J	0.6 J
1,1,2,2-Tetrachloroethane	4 U	20 U	20 U	4 U
1,3,5-Trimethylbenzene	0.9 J	1200 E	7 J	0.5 J
p-Bromofluorobenzene (% Rec)	111	124	111	122
Sample Volume (mL)	250	50	51	250
Quantitation Limit (ppbv)	4	20	20	4

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 14 of 16

Sample Number	13848	13849	13751	13752	13753
Sample Location	TB-14	TB-FB	TB-F3	TB-E9	TB-E2
Date Sampled	08/21/98	08/20/98	08/20/98	08/20/98	08/20/98
Date Analyzed	09/04/98	09/04/98	09/04/98	09/04/98	09/04/98
Data File	WDI101	WDI102	WDI103	WDI104	WDI105
Chloromethane	1600 U	1100 U	400 U	400 U	400 U
Vinyl Chloride	760000 E	1100 U	94000 E	120000 E	4400
Chloroethane	1600 U	1100 U	400 U	400 U	400 U
Trichlorofluoromethane	18000 C	12000 C	11000 EC	8900 C	6300 C
1,1-Dichloroethene	1600 U	1100 U	400 U	400 U	56 J
Methylene Chloride	1600 U	340 J	400 U	400 U	110 J
trans-1,2-Dichloroethylene	1600 U	1100 U	400 U	400 U	400 U
1,1-Dichloroethane	1600 U	1100 U	400 U	400 U	400 U
Trichloromethane	1600 U	1100 U	400 U	400 U	400 U
1,1,1-Trichloroethane	1600 U	270 J	400 U	400 U	200 J
1,2-Dichloroethane	1600 U	1100 U	400 U	400 U	400 U
Benzene	120000 E	300 J	36000 E	31000 E	22000 E
Carbon Tetrachloride	1600 U	1100 U	400 U	400 U	400 U
Trichloroethylene	1600 U	170 J	740	400 U	1900
Dibromomethane	1600 U	1100 U	400 U	400 U	400 U
Bromodichloromethane	500 J	1100 U	400 U	400 U	400 U
Toluene	170000 E	1100 J	32000 E	39000 E	54000 E
1,1,2-Trichloroethane	260000 E	1100 U	400 U	400 U	400 U
Tetrachloroethylene	1600 U	1100 U	160 J	400 U	9800
Ethylbenzene	21000	130 J	13000 E	12000 E	17000 E
m & p-Xylenes	60000 E	490 J	26000 E	29000 E	49000 E
Styrene	430 J	1100 U	140 J	400 U	400 U
o-Xylene	19000	130 J	6300	10000	18000 E
1,1,2,2-Tetrachloroethane	1600 U	1100 U	400 U	400 U	400 U
1,3,5-Trimethylbenzene	4400	1100 U	2200	3700	9600
p-Bromofluorobenzene (% Rec)	135	130	133	137	142
Sample Volume (mL)	0.625	0.900	2.5	2.5	2.5
Quantitation Limit (ppbv)	1600	1100	400	400	400

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 15 of 16

Sample Number	13826	13815	System Blank	13749	13829
Sample Location	TB-G9	TB-F9	Tedlar Bag	TB-F2	TB-E5
Date Sampled	08/20/98	08/19/98	N/A	08/21/98	08/21/98
Date Analyzed	09/04/98	09/04/98	09/04/98	09/04/98	09/04/98
Data File	WDI106	WDI107	WDI108	WDI110	WDI111
Chloromethane	270 J	200 U	4 U	1600 U	1600 U
Vinyl Chloride	400 U	410	4 U	1200000 E	220000 E
Chloroethane	400 U	200 U	4 U	1600 U	1600 U
Trichlorofluoromethane	6300 C	200 U	4 U	15000 C	23000 C
1,1-Dichloroethene	400 U	200 U	4 U	9000	2600
Methylene Chloride	400 U	200 U	4 U	1600 U	1600 U
trans-1,2-Dichloroethylene	400 U	200 U	4 U	19000	3100
1,1-Dichloroethane	400 U	200 U	4 U	1600 U	1600 U
Trichloromethane	400 U	200 U	4 U	1600 U	1600 U
1,1,1-Trichloroethane	400 U	200 U	4 U	1600 U	640 J
1,2-Dichloroethane	400 U	200 U	4 U	1600 U	1600 U
Benzene	310 J	16000 E	4 U	120000 E	94000 E
Carbon Tetrachloride	400 U	200 U	4 U	1600 U	1600 U
Trichloroethylene	400 U	200 U	4 U	180000 E	130000 E
Dibromomethane	400 U	200 U	4 U	1600 U	1600 U
Bromodichloromethane	400 U	200 U	4 U	1600 U	1600 U
Toluene	960	31000 E	0.8 J	190000 E	130000 E
1,1,2-Trichloroethane	400 U	200 U	4 U	1600 U	1600 U
Tetrachloroethylene	44 J	200 U	4 U	130000 E	4200
Ethylbenzene	160 J	4900	4 U	27000	4900
m & p-Xylenes	750	17000 E	0.4 J	86000 E	16000
Styrene	60 J	200 U	4 U	540 J	260 J
o-Xylene	190 J	4700	4 U	25000	3700
1,1,2,2-Tetrachloroethane	400 U	200 U	4 U	1600 U	1600 U
1,3,5-Trimethylbenzene	400 U	1200	4 U	7600	1600 U
p-Bromofluorobenzene (% Rec)	127	144	125	138	129
Sample Volume (mL)	2.5	5	250	0.625	0.625
Quantitation Limit (ppbv)	400	200	4	1600	1600

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

**Table 4* - Air Toxic Target Compound Results for Tenax/CMS Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304**
(concentrations in ppbv)

Page 16 of 16

Sample Number	13840
Sample Location	TB-A4
Date Sampled	08/21/98
Date Analyzed	09/04/98
Data File	WDI112
Chloromethane	820 J
Vinyl Chloride	340 J
Chloroethane	1600 U
Trichlorofluoromethane	22000
1,1-Dichloroethene	1600 U
Methylene Chloride	1600 U
trans-1,2-Dichloroethylene	1600 U
1,1-Dichloroethane	1600 U
Trichloromethane	1600 U
1,1,1-Trichloroethane	1600 U
1,2-Dichloroethane	1600 U
Benzene	1600 U
Carbon Tetrachloride	1600 U
Trichloroethylene	1600 U
Dibromomethane	1600 U
Bromodichloromethane	1600 U
Toluene	13000
1,1,2-Trichloroethane	1600 U
Tetrachloroethylene	1600 U
Ethylbenzene	13000
m & p-Xylenes	39000
Styrene	190 J
o-Xylene	11000
1,1,2,2-Tetrachloroethane	1600 U
1,3,5-Trimethylbenzene	5300
p-Bromofluorobenzene (% Rec)	135
Sample Volume (mL)	0.625
Quantitation Limit (ppbv)	1600

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Exceeds Calibration Range

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

* - All results in Table 4 were obtained through modification of method and should be used with discretion.

Table 5 - Air Toxic Target Compound Results for Summa Canister Samples
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 1 of 4

Sample Number	Method	SG04320	SG04311	SG04312	SG04313
Sample Location	Blank	Trip Blank	F-7	G-5	H-2
Date Sampled	N/A	08/27/98	08/27/98	08/27/98	08/27/98
Date Analyzed	09/09/98	09/09/98	09/09/98	09/09/98	09/09/98
Data File	WDI120	WDI121	WDI123	WDI127	WDI128
Chloromethane	4 U	4 U	5 J	4800 U	9600 U
Vinyl Chloride	4 U	4 U	26	21000	3500 J
Chloroethane	4 U	4 U	12 U	4800 U	9600 U
Trichlorofluoromethane	4 U	4 U	12 U	4800 U	9600 U
1,1-Dichloroethylene	4 U	4 U	12 U	4800 U	9600 U
Methylene Chloride	4 U	4 U	12 U	4800 U	9600 U
trans-1,2-Dichloroethylene	4 U	4 U	12 U	4800 U	9600 U
1,1-Dichloroethane	4 U	4 U	12 U	4800 U	9600 U
Trichloromethane	4 U	4 U	12 U	4800 U	9600 U
1,1,1-Trichloroethane	4 U	4 U	12 U	4800 U	9600 U
1,2-Dichloroethane	4 U	4 U	12 U	4800 U	9600 U
Benzene	4 U	4 U	53	71000	190000
Carbon Tetrachloride	4 U	4 U	12 U	4800 U	9600 U
Trichloroethylene	4 U	4 U	12 U	11000	9600 U
Dibromomethane	4 U	4 U	12 U	4800 U	9600 U
Bromodichloromethane	4 U	4 U	12 U	4800 U	9600 U
Toluene	4 U	4 U	27	94000	210000
1,1,2-Trichloroethane	4 U	4 U	12 U	4800 U	9600 U
Tetrachloroethylene	4 U	4 U	12 U	2600 J	9600 U
Ethylbenzene	4 U	4 U	42	18000	34000
m & p-Xylenes	4 U	4 U	64	66000	120000
Styrene	4 U	4 U	2 JD	4800 U	9600 U
o-Xylene	4 U	4 U	50	19000	38000
1,1,2,2-Tetrachloroethane	4 U	4 U	12 U	4800 U	9600 U
1,3,5-Trimethylbenzene	4 U	4 U	34	5900	10000
p-Bromofluorobenzene (% Rec)	116	122	128	128	127
Pressurized Sample Volume (mL)	250	250	250	100	50
Initial Pressure (psia)	N/A	N/A	13.5	13.4	12.9
Final Pressure (psia)	N/A	N/A	40.5	6432	6192
Quantitation Limit (ppbv)	4	4	12	4800	9600

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Concentration exceeded calibration limit (25nL)

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

Table 5 - Air Toxic Target Compound Results for Summa Canister Samples
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 2 of 4

Sample Number	SG04314	SG04314	Method	SG04315	SG04316
Sample Location	E-9	E-9 Rep	Blank	F-9	G-1
Date Sampled	08/27/98	08/27/98	N/A	08/27/98	08/27/98
Date Analyzed	09/09/98	09/10/98	09/10/98	09/10/98	09/10/98
Data File	WDI129	WDI136	WDI130	WDI131	WDI132
Chloromethane	1100 U	1100 U	4 U	1400 J	4800 U
Vinyl Chloride	3300	3100	4 U	4800 U	53000
Chloroethane	1100 U	1100 U	4 U	4800 U	4800 U
Trichlorofluoromethane	1100 U	1100 U	4 U	4800 U	4800 U
1,1-Dichloroethene	1100 U	1100 U	4 U	4800 U	580 J
Methylene Chloride	1100 U	1100 U	4 U	4800 U	4800 U
trans-1,2-Dichloroethylene	1100 U	1100 U	4 U	4800 U	9700
1,1-Dichloroethane	1100 U	1100 U	4 U	4800 U	4800 U
Trichloromethane	1100 U	1100 U	4 U	4800 U	4800 U
1,1,1-Trichloroethane	1100 U	1100 U	4 U	4800 U	4800 U
1,2-Dichloroethane	1100 U	1100 U	4 U	4800 U	4800 U
Benzene	2900	2300	4 U	13000	61000
Carbon Tetrachloride	1100 U	1100 U	4 U	4800 U	4800 U
Trichloroethylene	1100 U	1100 U	4 U	4800 U	73000
Dibromomethane	1100 U	1100 U	4 U	4800 U	4800 U
Bromodichloromethane	1100 U	1100 U	4 U	4800 U	4800 U
Toluene	3000	2400	4 U	42000	97000
1,1,2-Trichloroethane	1100 U	1100 U	4 U	4800 U	4800 U
Tetrachloroethylene	1100 U	1100 U	4 U	4800 U	110000
Ethylbenzene	790 J	700 J	4 U	8400	20000
m & p-Xylenes	2500	2200	4 U	48000	84000
Styrene	1100 U	1100 U	4 U	4800 U	4800 U
o-Xylene	800 J	710 J	4 U	14000	28000
1,1,2,2-Tetrachloroethane	1100 U	1100 U	4 U	4800 U	1100 J
1,3,5-Trimethylbenzene	260 J	230 J	4 U	8800	11000
p-Bromofluorobenzene (% Rec)	125	130	121	123	133
Pressurized Sample Volume (mL)	375	375	250	100	100
Initial Pressure (psia)	2.6	2.6	N/A	13.2	12.7
Final Pressure (psia)	1040.0	1040.0	N/A	6336.0	6096.0
Quantitation Limit (ppbv)	1100	1100	4	4800	4800

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Concentration exceeded calibration limit (25nL)

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

Table 5 - Air Toxic Target Compound Results for Summa Canister Samples
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 3 of 4

Sample Number	SG04318 G-7	SG04319 C-3	SG04321 B-5	SG04322 Ambient Decon Area
Sample Location				
Date Sampled	08/27/98	08/27/98	08/27/98	08/27/98
Date Analyzed	09/10/98	09/10/98	09/10/98	09/10/98
Data File	WDI133	WDI134	WDI135	WDI137
Chloromethane	3300	12 J	1600 U	4 U
Vinyl Chloride	45000	16 J	1100 J	4 J
Chloroethane	2700 U	24 U	1600 U	4 U
Trichlorofluoromethane	2700 U	24 U	1600 U	4 U
1,1-Dichloroethene	2700 U	24 U	1600 U	4 U
Methylene Chloride	2700 U	24 U	1600 U	1 J
trans-1,2-Dichloroethylene	2700 U	24 U	1600 U	4 U
1,1-Dichloroethane	2700 U	24 U	1600 U	4 U
Trichloromethane	2700 U	24 U	1600 U	4 U
1,1,1-Trichloroethane	2700 U	24 U	1600 U	4 U
1,2-Dichloroethane	2700 U	24 U	1600 U	4 U
Benzene	31000	19 J	640 J	5
Carbon Tetrachloride	2700 U	24 U	1600 U	4 U
Trichloroethylene	3800	3 J	240 J	1 J
Dibromomethane	2700 U	24 U	1600 U	4 U
Bromodichloromethane	2700 U	24 U	1600 U	4 U
Toluene	51000	27	1700	7
1,1,2-Trichloroethane	2700 U	24 U	1600 U	4 U
Tetrachloroethylene	1900 J	6 J	260 J	4 U
Ethylbenzene	13000	8 J	800 J	1 J
m & p-Xylenes	38000	30	4000	5
Styrene	320 JD	24 U	1600 U	4 U
o-Xylene	10000	11 J	1700	2 J
1,1,2,2-Tetrachloroethane	2700 U	24 U	1600 U	4 U
1,3,5-Trimethylbenzene	4700	24 U	1800	4 U
p-Bromofluorobenzene (% Rec)	133	132	128	129
Pressurized Sample Volume (mL)	150	125	300	500
Initial Pressure (psia)	3.5	13.4	13.4	13.5
Final Pressure (psia)	1400.0	40.2	6432.0	27.0
Quantitation Limit (ppbv)	2700	24	1600	4

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Concentration exceeded calibration limit (25nL)

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

Table 5 - Air Toxic Target Compound Results for Summa Canister Samples
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)

Page 4 of 4

Sample Number	System	A14916
Sample Location	Blank	Trench 2
Date Sampled	N/A	09/02/98
Date Analyzed	09/10/98	09/10/98
Data File	WDI140	WDI142
Chloromethane	4 U	12 U
Vinyl Chloride	4 U	12 U
Chloroethane	4 U	12 U
Trichlorofluoromethane	4 U	12 U
1,1-Dichloroethene	4 U	12 U
Methylene Chloride	4 U	12 U
trans-1,2-Dichloroethylene	4 U	12 U
1,1-Dichloroethane	4 U	12 U
Trichloromethane	4 U	12 U
1,1,1-Trichloroethane	4 U	12 U
1,2-Dichloroethane	4 U	12 U
Benzene	4 U	31
Carbon Tetrachloride	4 U	12 U
Trichloroethylene	4 U	12 U
Dibromomethane	4 U	12 U
Bromodichloromethane	4 U	12 U
Toluene	4 U	12 U
1,1,2-Trichloroethane	4 U	50
Tetrachloroethylene	4 U	2 J
Ethylbenzene	4 U	15
m & p-Xylenes	4 U	38
Styrene	4 U	12 U
o-Xylene	4 U	11 J
1,1,2,2-Tetrachloroethane	4 U	12 U
1,3,5-Trimethylbenzene	4 U	8 J
p-Bromofluorobenzene (% Rec)	133	130
Pressurized Sample Volume (mL)	250	250
Initial Pressure (psia)	N/A	14.0
Final Pressure (psia)	N/A	42.0
Quantitation Limit (ppbv)	4	12

A - Assumed volume for Blanks

B - <3 times Method Blank value

C - Compound Calibration >25% RSD

D - Compound Calibration Check >25% RPD

E - Concentration exceeded calibration limit (25nL)

J - Below 1.00 nL Quantitation Limit

U - Not Detected

N/A - Not Applicable

Table 6 - Air Toxic BS/BSD Recovery Summary for Tenax/CMS Tubes Samples Desorbed into Tedlar Bags
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(All results are qualitative use only)

Date Analyzed Data File	Spike Amount	Tedlar Bag Blank	Tedlar Bag BS	%	Tedlar Bag BSD	%	RPD
		09/04/98 WDI116	09/04/98 WDI117	Recovery	09/04/98 WDI118	Recovery	
Chloromethane	9.8	0.00	9.77	100	9.76	100	0
Vinyl Chloride	9.7	0.00	10.04	104	10.06	104	0
Chloroethane	10.0	0.00	10.02	100	10.15	102	1
Trichlorofluoromethane	10.4	0.00	9.71	93	10.18	98	5
1,1-Dichloroethene	10.2	0.00	9.98	98	10.16	100	2
Methylene Chloride	10.0	0.00	9.82	98	9.85	99	0
trans-1,2-Dichloroethene	10.0	0.00	10.04	100	10.15	102	1
1,1-Dichloroethane	10.2	0.00	9.76	96	9.93	97	2
Trichloromethane	10.2	0.00	10.13	99	10.32	101	2
1,1,1-Trichloroethane	10.1	0.00	10.61	105	10.67	106	1
1,2-Dichloroethane	10.2	0.00	10.22	100	10.60	104	4
Benzene	10.0	0.00	10.08	101	10.12	101	0
Carbon Tetrachloride	9.8	0.00	10.45	107	10.69	109	2
Trichloroethylene	10.0	0.00	10.27	103	10.36	104	1
Dibromomethane	9.8	0.00	10.40	106	10.46	107	1
Bromodichloromethane	10.1	0.00	10.41	103	10.54	104	1
Toluene	10.1	0.13	10.52	103	10.48	102	0
1,1,2-Trichloroethane	9.8	0.00	10.52	107	10.60	108	1
Tetrachloroethylene	10.0	0.00	10.44	104	10.43	104	0
Ethylbenzene	10.1	0.00	10.82	107	11.00	109	2
meta & para-Xylenes	10.2	0.00	10.67	105	10.90	107	2
Styrene	10.4	0.00	10.24	98	10.42	100	2
ortho-Xylene	10.4	0.00	10.75	103	10.90	105	1
1,1,2,2-Tetrachloroethane	10.0	0.00	10.48	105	10.71	107	2
meta-Ethyltoluene	10.5	0.00	10.35	99	10.73	102	4
p-Bromofluorobenzene (% Rec.)	N/A	119	101	N/A	103	N/A	N/A

N/A - Not Applicable

Table 7 - Air Toxic MS/MSD Recovery Summary for Summa Canister Samples
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304

Sample Location		SG04322	SG04322 MS		SG04322 MSD		
Sample Number		Ambient	Ambient		Ambient		
Date Sampled		Decon Area	Decon Area		Decon Area		
Date Analyzed		09/10/98	09/10/98	%	09/10/98	%	
Data File	Spike Amount	WDI137	WDI138	Recovery	WDI139	Recovery	RPD
Chloromethane	9.8	0.14	10.41	105	10.35	104	1
Vinyl Chloride	9.7	0.96	10.59	99	10.53	99	1
Chloroethane	10.0	0.00	10.35	103	9.97	100	4
Trichlorofluoromethane	10.4	0.00	11.45	110	10.89	105	5
1,1-Dichloroethene	10.2	0.00	9.99	98	9.95	98	0
Methylene Chloride	10.0	0.20	10.31	101	10.27	101	0
trans-1,2-Dichloroethene	10.0	0.00	9.92	99	9.73	97	2
1,1-Dichloroethane	10.2	0.00	10.47	103	10.42	102	0
Trichloromethane	10.2	0.00	10.39	102	10.29	101	1
1,1,1-Trichloroethane	10.1	0.00	9.57	95	9.63	95	1
1,2-Dichloroethane	10.2	0.00	10.33	101	10.57	104	2
Benzene	10.0	1.26	10.87	96	11.14	99	3
Carbon Tetrachloride	9.8	0.00	9.66	99	9.72	99	1
Trichloroethylene	10.0	0.14	10.51	104	10.42	103	1
Dibromomethane	9.8	0.00	10.47	107	10.55	108	1
Bromodichloromethane	10.1	0.00	10.38	103	10.40	103	0
Toluene	10.1	1.71	11.80	100	12.07	103	3
1,1,2-Trichloroethane	9.8	3.64	10.17	67	10.31	68	2
Tetrachloroethylene	10.0	0.00	10.01	100	9.85	99	2
Ethylbenzene	10.1	0.34	11.34	109	11.66	112	3
meta & para-Xylenes	10.2	1.20	12.10	107	12.32	109	2
Styrene	10.4	0.00	10.75	103	11.11	107	3
ortho-Xylene	10.4	0.40	11.34	105	11.68	108	3
1,1,2,2-Tetrachloroethane	10.0	0.00	11.13	111	11.33	113	2
meta-Ethyltoluene	10.5	0.12	11.42	108	11.94	113	4
p-Bromofluorobenzene (% Rec.)	N/A	129	110	N/A	112	N/A	N/A

N/A - Not Applicable

**Table 8 - Air Toxic Target Compound Results for 10mL Standard
Waste Disposal Inc. Site, Santa Fe Springs, CA WA # 3-304
(concentrations in ppbv)**

Sample Location	Tediar Bag	
Sample Number	Tube 10mL	
Date Sampled	Standard	
Date Analyzed	N/A	
Data File	08/21/98	
	WDI019	% Recovery
Chloromethane	10	100
Vinyl Chloride	10	104
Chloroethane	6.8	68
Trichlorofluoromethane	7.2	72
1,1-Dichloroethene	10	99
Methylene Chloride	10	101
trans-1,2-Dichloroethylene	10	101
1,1-Dichloroethane	10	103
Trichloromethane	10	104
1,1,1-Trichloroethane	11	110
1,2-Dichloroethane	11	108
Benzene	11	111
Carbon Tetrachloride	11	114
Trichloroethylene	11	108
Dibromomethane	11	108
Bromodichloromethane	11	110
Toluene	12	121
1,1,2-Trichloroethane	12	116
Tetrachloroethylene	12	116
Ethylbenzene	12	124
m & p-Xylenes	12	123
Styrene	11	112
o-Xylene	12	124
1,1,2,2-Tetrachloroethane	11	113
1,3,5-Trimethylbenzene	12	118
p-Bromofluorobenzene (% Rec)	114	
Sample Volume (mL)	500	
Quantitation Limit (ppbv)	2	

APPENDIX A

CHAINS-OF-CUSTODY

Waste Disposal Inc. Site, Santa Fe Springs, CA

Sampled 15 - 27 August 1998 and 03 September 1998

WA#: 03347-143-001-3304-01

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0001

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 VOW: 03347-143-001-3303-01
 PA Contract 68-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 941-4616

Page No.: 01 of 06
 Cooler #:01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732)321-4200

081998 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
162	✓A	3304-13740	E7	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	8/19/98
163	✓A	3304-13741	G9	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	
164	✓A	3304-13742	F8	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	
165	✓A	3304-13743	G7	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	
166	✓A	3304-13744	F9	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	
167	✓A	3304-13745	G9	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	
168	✓A	3304-13746	G8	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	
169	✓A	3304-13750	I7	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
170	✓A	3304-13757	BACKGROUND	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
171	✓A	3304-13759	H4	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	8/19/98
172	✓A	3304-13760	I4	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	8/19/98
173	✓A	3304-13760	DD	Air-Tube	8/15/1998	TUBE/4 C	VOA	1000 ml	8/19/98

Special Instructions:

PLEASE NOTE THAT ALL SAMPLE NUMBERS ARE PRECEDED BY "3304" ADDED BY SCRIBE. PLEASE REPORT SAMPLE NUMBERS AS IS. THAT IS SAMPLE NO. 3304-13740 SHOULD BE REPORTED AS 1740. THANKS.

REFERENCE COC:

Date/Reason	Relinquished By	Date	Received By	Date	Time	Date/Reason	Relinquished By	Date	Received By	Date	Time
8/19/98	Sander	8/19/98	Gasser	8/19/98	11:00	All/Analysis	Gasser	8/19/98	J.S. 2m	8/19/98	11:50 AM

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0002

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 VOW: 03347-143-001-3303-01
 PA Contact 68-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 941-4616

Page No.: 02 of 06
 Cooler #: 01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732) 321-4200

081998 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
474	A	3304-13761	E9	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
475	A	3304-13762	E8	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
476	A	3304-13763	E7	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
477	A	3304-13764	D8	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
478	A	3304-13765	A4	Air-Tube	8/17/1998	TUBE/4 C	VOA		1000 ml
479	A	3304-13766	F8	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
480	A	3304-13767	F3	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
481	A	3304-13770	F1	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
482	A	3304-13771	E1	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
483	A	3304-13772	E2	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
484	A	3304-13773	E3	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml

Initial Instructions:

EASE NOTE THAT ALL THE SAMPLE NUMBERS ARE PRECEDED BY A "3304" ADDED BY SCRIBE.
 EASE REPORT THE SAMPLE AS IS WITHOUT THE "3304". THAT IS SAMPLE # 3304-13740 SHOULD
 BE REPORTED AS 13740.
 THANKS.

REFERENCE COC:

Reason	Relinquished By	Date	Received By	Date	Time	Reason	Relinquished By	Date	Received By	Date	Time
Sampled	C. Hasser	8/19/98	C. Hasser	8/19/98	11:00	All / Analysis	C. Hasser	8/19/98	S. ...	8/19/98	11:00am

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0003

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 NOD: 03347-143-001-3303-01
 EPA Contract 68-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 9414816

Page No.: 03 of 06
 Cooler #:01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732)321-4200

081998 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
185 ✓A		3304-13774	D4	Air-Tube	8/16/98	TUBE/4 C	VOA	5000 ml	
486 ✓A		3304-13775	G1	Air-Tube	8/16/98	TUBE/4 C	VOA	1000 ml	
487 ✓A		3304-13776	H7	Air-Tube	8/15/98	TUBE/4 C	VOA	1001 ml	
488 ✓A		3304-13777	H8	Air-Tube	8/15/98	TUBE/4 C	VOA	1005 ml	
489 ✓A		3304-13778	I5	Air-Tube	8/15/98	TUBE/4 C	VOA	1000 ml	
190 ✓A		3304-13779	I6	Air-Tube	8/17/98	TUBE/4 C	VOA	1000 ml	
191 ✓A		3304-13810	A5	Air-Tube	8/15/98	TUBE/4 C	VOA	1000 ml	
192 ✓A		3304-13811	B5	Air-Tube	8/15/98	TUBE/4 C	VOA	1000 ml	
193 ✓A		3304-13812	B7	Air-Tube	8/15/98	TUBE/4 C	VOA	1000 ml	
194 ✓A		3304-13813	B8	Air-Tube	8/15/98	TUBE/4 C	VOA	1000 ml	

Special Instructions:

EASE NOTE THAT ALL SAMPLE NUMBERS ARE PRECEDED BY "3304." ADDED BY SCRIBE. PLEASE REPORT SAMPLE NUMBERS AS IS. THAT IS SAMPLE NUMBER 3304-13740 SHOULD BE REPORTED AS 13740. THANKS

REFERENCE COC:

Reason	Relinquished By	Date	Received By	Date	Time	Reason	Relinquished By	Date	Received By	Date	Time
Sample Collected 8/19/98	C Basses	8/19/98	11:00	All Analysis			C Basses	8/19/98	→ 2pm	8/19/98	11:00pm

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0004

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 WOH: 03347-143-001-3303-01
 EPA Contract 88-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 941-4818

Page No.: 04 of 06
 Cooler #:01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732)321-4200

081998 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
495 ✓	A	3304-13814	C5	Air-Tube	8/15/1998	TUBE/4 C	VOA		1100 ml
496 ✓	A	3304-13816	C9	Air-Tube	8/17/1998	TUBE/4 C	VOA		1000 ml
497 ✓	A	3304-13817	C9	Air-Tube	8/17/1998	TUBE/4 C	VOA		1000 ml
498 ✓	A	3304-13818	A4	Air-Tube	8/17/1998	TUBE/4 C	VOA		1000 ml
499 ✓	A	3304-13819	F7	Air-Tube	8/17/1998	TUBE/4 C	VOA		1000 ml
500 ✓	A	3304-13820	D7	Air-Tube	8/15/1998	TUBE/4 C	VOA		1100 ml
501 ✓	A	3304-13821	D8	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
502 ✓	A	3304-13822	D5	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
503 ✓	A	3304-13823	C8	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
504 ✓	A	3304-13824	C9	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
505 ✓	A	3304-13852	H2	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml

Special Instructions:

PLEASE NOTE THAT ALL SAMPLE NUMBERS ARE PRECEDED BY "3304-", ADDED BY SCRIBE. PLEASE REPORT SAMPLE NUMBER AS IS. THAT IS SAMPLE NUMBER 3304-13740 SHOULD BE REPORTED AS 13740. THANKS.

REFERENCE COC:

Time/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
✓ Samples Collected 8/19/98	Gasser	8/19/98	11:00	All/Analysis			Gasser	8/19/98	11:00 am	8/19/98	11:15 AM

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0008

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 WO#: 03347-143-001-3303-01
 EPA Contract 68-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 941-4818

Page No.: 01 of 02
 Coder #: 01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732)321-4200

082498 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
536	A	✓ 3304-13768	F9	Air-Tube	8/19/1998	TUBE/4 C	VOA		1020 ml
537	A	✓ 3304-13769	D8	Air-Tube	8/19/1998	TUBE/4 C	VOA		1020 ml
538	A	✓ 3304-13815	F9	Air-Tube	8/19/1998	TUBE/4 C	VOA		1020 ml
539	A	✓ 3304-13841	C9	Air-Tube	8/21/1998	TUBE/4 C	VOA		51.5 ml
540	A	✓ 3304-13842	C9	Air-Tube	8/21/1998	TUBE/4 C	VOA		51.5 ml
541	A	✓ 3304-13843	D9	Air-Tube	8/21/1998	TUBE/4 C	VOA		50 ml
542	A	✓ 3304-13844	D6	Air-Tube	8/21/1998	TUBE/4 C	VOA		50 ml
543	A	✓ 3304-13845	D4	Air-Tube	8/21/1998	TUBE/4 C	VOA		50 ml
544	A	✓ 3304-13846	G3	Air-Tube	8/21/1998	TUBE/4 C	VOA		50 ml
545	A	✓ 3304-13847	H4	Air-Tube	8/21/1998	TUBE/4 C	VOA		50 ml
546	A	✓ 3304-13848	I4	Air-Tube	8/21/1998	TUBE/4 C	VOA		50 ml
547	A	✓ 3304-13849	FB	Air-Tube	8/20/1998	TUBE/4 C	VOA		50 ml
548	A	✓ 3304-13850	TB	Air-Tube	8/21/1998	TUBE/4 C	VOA		50 ml

Special Instructions:

Please note that all sample numbers are preceded by "3304-",

which is added by SCRIBE. Please report sample numbers as is. That is sample number "3304-13740" should be reported as 13740. Thanks.

REFERENCE COC:

Name/Reason	Relinquished By	Date	Received By	Date	Time	Name/Reason	Relinquished By	Date	Received By	Date	Time
All samples/analysis has been done	C. Hassen	8/24/98		8/24/98	10:00	All/Analysis	C. Hassen	8/24/98	J. S.	8/26/98	10:30

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0007

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 WOH# 03347-143-001-3303-01
 EPA Contract 88-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 9414818

Page No.: 02 of 02
 Cooler #:01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732)321-4200

082498

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
549	A	✓ 3304-13749	F2	Air-Tube	8/21/98	TUBE/4 C	VOA		50 ml
550	A	✓ 3304-13750	G9	Air-Tube	8/20/98	TUBE/4 C	VOA		100 ml
551	A	✓ 3304-13751	F3	Air-Tube	8/20/98	TUBE/4 C	VOA		100 ml
552	A	✓ 3304-13752	E9	Air-Tube	8/20/98	TUBE/4 C	VOA		100 ml
553	A	✓ 3304-13753	E2	Air-Tube	8/20/98	TUBE/4 C	VOA		100 ml
554	A	✓ 3304-13754	G9	Air-Tube	8/20/98	TUBE/4 C	VOA		100 ml
555	A	✓ 3304-13826	G9	Air-Tube	8/20/98	TUBE/4 C	VOA		100 ml
556	A	✓ 3304-13827	F7	Air-Tube	8/20/98	TUBE/4 C	VOA		100 ml
557	A	✓ 3304-13828	D3	Air-Tube	8/21/98	TUBE/4 C	VOA		50 ml
558	A	✓ 3304-13829	E5	Air-Tube	8/21/98	TUBE/4 C	VOA		50 ml
559	A	✓ 3304-13840	A4	Air-Tube	8/21/98	TUBE/4 C	VOA		52 ml

Special Instructions:

Please note that all sample numbers are preceded by "3304."

which is added by scribe. Please report sample numbers as is. That is sample "3304-13740" should be reported as 13740.

REFERENCE COC:

Item/Reason	Retain/Released By	Date	Received By	Date	Time	Item/Reason	Retain/Released By	Date	Received By	Date	Time
After sample analysis was done on 8/24/98 C. Gasser		8/24/98	C. Gasser	8/24/98	10:00	After sample analysis	C. Gasser	8/24/98	J. C. Lin	8/24/98	10:30

**REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022**

CHAI. OF CUSTODY RECORD

Project Name: WDI
Project Number: 3-3049
RFW Contact: G. Newland Phone: 4200

No: 04845

SHEET NO. 1 OF 1

090198 -

Sample Identification

Analyses Requested

REAC #	Sample No.	Sampling Location	Matrix	Date Collected	# of Bottles	Container/Preservative	TD-14		
✓ 793	S604311	F-7	A	8/21/98	1	SLURV / none			
✓ 794	S604312	G-5							
✓ 795	S604313	H-2							
✓ 796	S604314	E-9							
✓ 797	S604315	F-9							
✓ 798	S604316	G-1							
✓ 799	S604317	F-4							
✓ 800	S604318	G-7							
✓ 801	S604319	TR C-3							
✓ 802	S604320	TR bIK							
✓ 803	S604321	B-5							
✓ 804	S604322	Ambient @ Decan Area			↓	↓	↓		

卷之三

SD - Sediment
DS - Drum Solids
DL - Drum Liquids
X - Other

PW - Potable Water
GW - Groundwater
SW - Surface Water
SL - Sediment

S - Soil
W - Water
O - Oil
A - Air

Special Instructions:

T014 vro
GC/MS

At high Hydrocarbon / CO₂ / C₆H₆
background in all samples

FOR SUBCONTRACTING USE ONLY

**FROM CHAIN OF
CUSTODY #**

**REAC, Edison, NJ
(908) 321-4200
EPA Contract 68-C4-0022**

CHAIN OF CUSTODY RECORD

Project Name: WDI
Project Number: 334743001330401
RFW Contact: Gerry Neubauer Phone: (732) 321-42

No: 09078

SHEET NO. / OF /

091098-

Sample Identification

Analyses Requested

Marty

Special Instructions:

SD - Sediment
DS - Drum Solids
DL - Drum Liquids
X - Other

QA/QC by MM

FOR SUBCONTRACTING USE ONLY

**FROM CHAIN OF
CUSTODY #**

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0005

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 VCN: 03347-143-001-3303-01
 EPA Contract 88-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 941-4818

Page No.: 05 of 06
 Cooler #:01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732)321-4200

081998 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analyses Requested	MS MSD	Comments
506	✓A	3304-13825	C9	Air-Tube	8/17/1998	TUBE/4 C	VOA		1000 ml
507	✓A	3304-13850	G2	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
508	✓A	3304-13851	G3	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
509	✓A	3304-13853	H3	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
510	✓A	3304-13854	H3	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
511	✓A	3304-13855	H3	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
512	✓A	3304-13858	H5	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
513	✓A	3304-13859	H6	Air-Tube	8/15/1998	TUBE/4 C	VOA		1000 ml
514	✓A	3304-13860	A4	Air-Tube	8/16/1998	TUBE/4 C	VOA		1000 ml
515	✓A	3304-13861	B4	Air-Tube	8/16/1998	TUBE/4 C	VOA		1100 ml

Special Instructions:

EASE NOTE THAT ALL SAMPLE NUMBERS ARE PRECEDED BY "3304" ADDED BY SCRIBE. PLEASE REPORT SAMPLE NUMBER AS IS. THAT IS SAMPLE NUMBER 3304-13740 SHOULD BE REPORTED AS 13740. THANKS

REFERENCE COC:

Reason	Reinquished By	Date	Received By	Date	Time	Reason	Reinquished By	Date	Received By	Date	Time
1/ Samples	✓Casson	8/19/98	Casson	8/19/98	11:00	All Analysis	✓Casson	8/19/98	→ C.	8/19/98	11:15 AM

USEPA ERT

CHAIN OF CUSTODY RECORD

COC # 3304-0006

REAC, Edison, NJ
 Contact: GARY NEWHART/ED MCGOVERN
 (908) 321-4200
 VOW: 03347-143-001-3303-01
 PA Contract 68-C4-0022

Project Name: WASTE DISPOSAL, INC.
 Location: SANTA FE SPRINGS, CA
 Site Phone: (562) 941-4616

Page No.: 06 of 06
 Cooler #:01
 Lab: REAC LABORATORIES
 Contact: YI HUA LIN
 (732)321-4200

081998 -

LAB #	Tag	Sample #	Location	Matrix	Collected	Container/Preservative	Analysis Requested	MS MSD	Comments
516	A	3304-13745	TB	Air-Tube	8/16/1998	TUBE/4 C	VOA	0 ml	
517	A	3304-13747	TB	Air-Tube	8/16/1998	TUBE/4 C	VOA	0 ml	
518	A	3304-13862	C3	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
519	A	3304-13863	C4	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
520	A	3304-13864	C4	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
521	A	3304-13865	D3	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
522	A	3304-13866	D3	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
523	A	3304-13868	F2	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	
524	A	3304-13869	F3	Air-Tube	8/16/1998	TUBE/4 C	VOA	1000 ml	

Special Instructions:

EASE NOTE THAT ALL SAMPLE NUMBERS ARE PRECEDED BY "3304-", ADDED BY SCRIBE. PLEASE
 PORT SAMPLE NUMBER AS IS. THAT IS SAMPLE NUMBER 3304-13470 SHOULD BE REPORTED AS
 740. THANKS.

REFERENCE COC:

Date/Reason	Relinquished By	Date	Received By	Date	Time	Remarks/Reason	Relinquished By	Date	Received By	Date	Time
1. Sample collected 8/16/98	C Masser	8/16/98	11:00	All Analyses			Gasses	8/16/98	J. C. -	8/16/98	11:57 pm